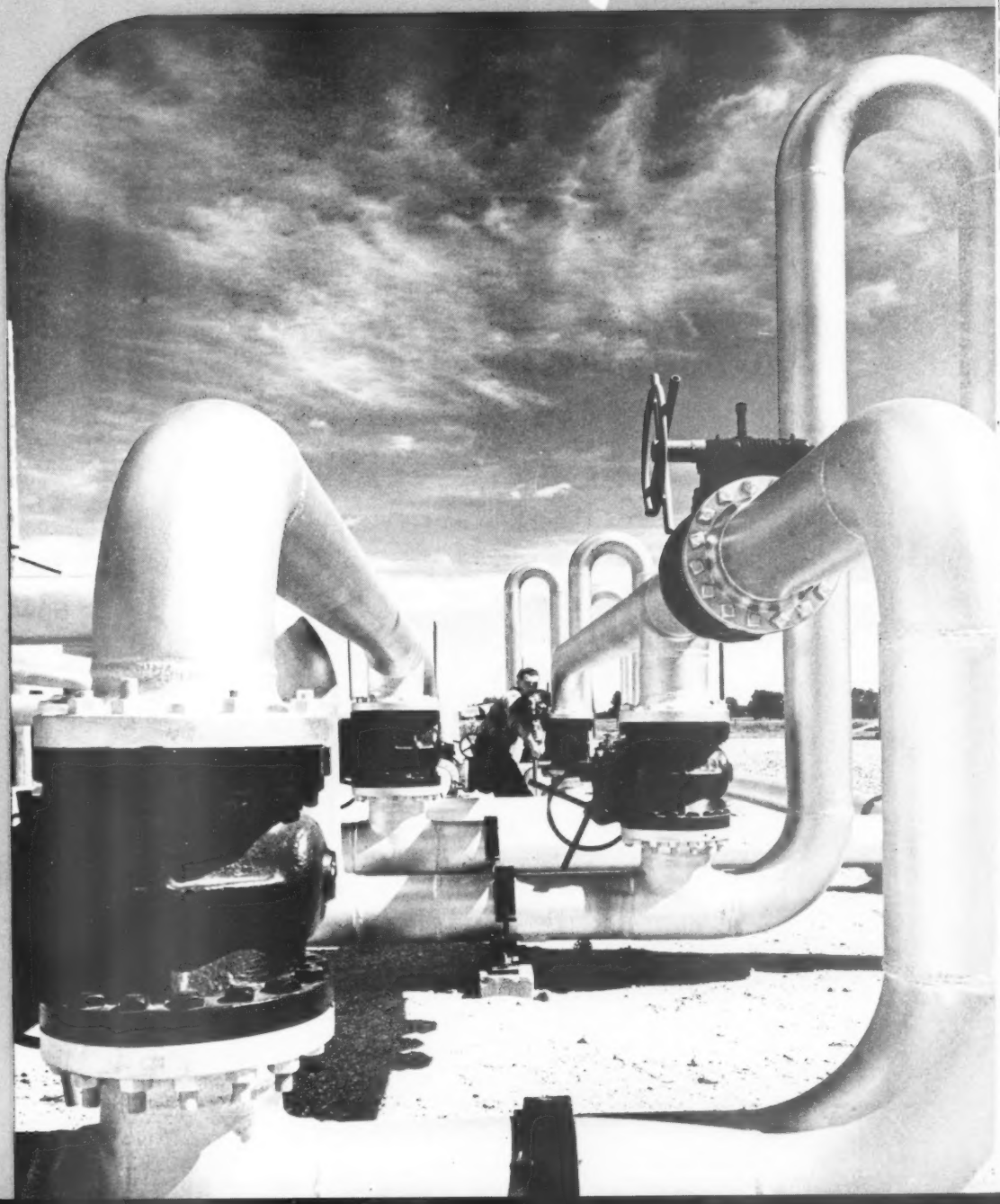
AMERICAN GAS ASSOCIATION

Monthly



EPTEMBER
1950

Beautiful to behold!

and so automatic

You'll fall in love with cooking a
over again when you change to
new Gas range. It's so *beautiful* yo
can't stop looking at it...yet so *automa*
it cooks a complete oven meal without
glance from you. Cool, clean, *instantly fa*
—it not only gives you more than any oth
modern range but costs you *less!* Less to bu
Less to install. Less to operate! Join the million
who are choosing new Gas ranges every year

you can love it and leave it!

NEW FREEDOM GAS KITCHEN DESIGN

ROPER "CP" GAS RANGE—ONE OF MANY ALL NEW, ALL AUTOMATIC GAS RANGES BUILT TO "CP" STANDARDS.

Complete clock control!

Any heat—instantly!

Smokeless broiling!

GAS has got it!

FOR MODERN COOKING, REFRIGERATION, WATER-HEATING
HOUSE-HEATING, AIR-CONDITIONING, CLOTHES-DRYING, INCINERATION

AMERICAN GAS ASSOCIATION

• Typical advertisement in A. G. A. series for September-December which will feature individually the gas ranges of seven participating manufacturers

This month's cover: Employee of Union Gas Co. of Canada Ltd. operating valves during a metering run at company's underground storage station in Lambton County

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WELCOME, September, traditional month of international tension. Welcome, September, month of decision for the American economy. . . . In the gas industry some of these decisions already have been made. Others will be discussed during the annual Convention in October. . . . Concrete steps have been taken by the A. G. A. Defense Committee to prepare the industry for any future emergency. Steel requirements, wartime tax provisions, local defense programs, and a variety of subjects are under study. . . . The uncertain international scene has placed a supreme responsibility on our shoulders. In this situation, only a courageous spirit will suffice. Now is no time to "take our foot off the gas;" no time to discard trained sales forces and close up shop. Now as never before we must help to keep the national economy strong. Now is the time to inventory our position; time to build closer relations with the public; to develop a long-range research program that will maintain gas technology at the highest possible level. . . . Time and events march fast. The gas industry must work hard in September so that it will not be caught with either its plans or its plants down!

JAMES M. BEALL
MANAGER, PUBLICATIONS

JAC A. CUSHMAN
EDITOR

RICHARD F. MULLIGAN
ART SUPERVISOR

EDITORIAL OFFICES:
AMERICAN GAS ASSOCIATION
420 LEXINGTON AVE., NEW YORK 17, N.Y.

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VOL. 32 NO. 9

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HAROLD E. STASSEN, president, University of Pennsylvania, leading educator, economist and politician, will address Monday general session at A.G.A. Convention on "Utilities and Freedom"

D. A. HULCY, A.G.A. vice-president, prominent in numerous national and civic organizations, will be a presiding officer at a combined meeting of Manufacturers and Natural Gas Depart...

JAMES F. OATES, JR., chairman, The Peoples Gas Light & Coke Co., Chicago, will keynote the Thursday morning general session on "Levelling Hills and Valleys Is in the Public Service"

JAMES K. POLK, Monday general session speaker on "Social Security Unlimited," New York legal expert and chairman, American Bar Association's special committee on Social Security

W. PAUL JONES, president, Servel, Inc., Evansville, Ind., will discuss a vital phase of ... during Tuesday morning ... session talk on "The New ... Potential of the Gas ...

STANLEY H. HOBSON, president, Gas Appliance Manufacturers Association, will outline the manufacturers' viewpoint in a Thursday morning speech "Spike Driving With a Tack Hammer"

GEORGE F. MITCHELL, A.G.A. vice-president and department chairman, president of Chicago utility, will preside with Mr. Hulcy at Monday morning combined meeting during Atlantic City Convention

HUGH H. CUTHRELL, A.G.A. president and vice-president, The Brooklyn Union Gas Co., has chosen Convention slogan "Gas—The Flame of Progress" for title of his address

Industry massing for 1950 convention

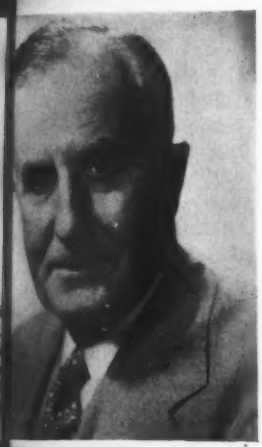
Topflight authorities from many branches of American life and industry have been enlisted to address American Gas Association's Thirty-Second Annual Convention and Exhibition in Atlantic City, N. J., October 2-5. According to George E. Whitwell, vice-president, Philadelphia Electric Co., and chairman, A. G. A. Convention committee, the four-day convention will be one of the most informative and dynamic ever presented.

A special attraction during the Convention will be the giant exhibition of gas appliances and equipment sponsored by Gas Appliance Manufacturers Association. Last-minute reports show that a record 175 exhibitors will utilize all available show space in the huge Atlantic City Auditorium. More than 1,200 new and improved products will be shown to utility, sales and other executives, appliance dealers and distributors.

Use of natural gas is becoming so universal today that it is of vital interest to both manufactured gas and mixed gas companies. In view of this fact, the Convention will open with a joint meeting of the A. G. A. Manufactured Gas and Natural Gas Departments. Respective chairmen of the two departments, George F. Mitchell, president, The Peoples Gas Light and Coke Co., Chicago, and D. A. Hulcy, president, Lone Star Gas Co., Dallas, Texas, will direct the meeting in the ballroom of the Auditorium.

Highlight of this joint meeting will be a panel on problems of manufactured gas companies which are anticipating the arrival of natural gas. Four experts from different gas utilities will outline their companies' experiences in connection with changeover to natural gas. Another feature of the Monday morning session will be

HAYES, gas company sales ve from Minneapolis, will Thursday general session his sugges'ions for the Public Sold on Industry Responsibility"



OTTO A. SEYFERTH, president, U. S. Chamber of Commerce, will present his views on "The Contribution of Business Management to the National Welfare" at Tuesday morning general session

ACEG. STRATHERN, Eastern d Fuel Associates, author eaker on human relations, eveal new slants on sell- Tuesday Convention talk, to Be Human on the Job"

a talk on the nation's fuel resources by a prominent authority. Election of officers and other departmental business will complete the program.

Hugh H. Cuthrell, president of A. G. A. and vice-president, The Brooklyn Union Gas Co., will open the first general session on Monday afternoon. The title of his address, "Gas—The Flame of Progress," also will serve as the slogan for the entire Convention. Mr. Cuthrell is expected to review advances which the gas industry has made in the production and utilization fields during the past year. Two additional general sessions will be held on Tuesday and Thursday mornings.

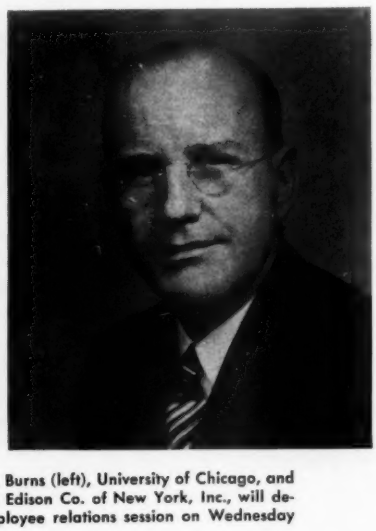
Harold E. Stassen, president, University of Pennsylvania, has earned international acclaim in the fields of education, economics and politics. Mr. Stassen will be one of the key speakers on the afternoon program on Monday, October 2. An outstanding authority on the importance of manpower in our economic system, his talk, "Utilities and Freedom," will point out the vital necessity of selling the free enterprise system as our chief safeguard against today's chaotic world conditions.

The magnitude and cost of the current Social Security program make it a matter of national interest, both to management and employees. James K. Polk, New York law firm of Whitman, Ransom, Coulson & Goetz, is a recognized expert on Social Security who is now serving as chairman of the special committee on Social Security, American Bar Association. On invitation of the A. G. A. Accounting Section, Mr. Polk will point out some of the inequities and abuses of the present system in a talk titled "Social Security Unlimited."

Monday evening in the Auditorium ballroom, the President's Reception and dancing will comprise the first of the recreation programs arranged for the Convention.

The Tuesday program will open with a general sessions meeting in the Auditorium. Otto A. Seyferth, president, United States Chamber of Commerce, will be one of the key speakers. Mr. Seyferth will give the conference his views on "The Contribution of Business Management to the National Welfare."

Wallace G. Strathern, director of training, Eastern Gas and Fuel Associates, is well known as an author and speaker on the subject of human relations. As the representative of the A. G. A. Operating Section, Mr. Strathern will bring some new slants on selling in his talk "How to Be Human on the Job."



EMPHASIS ON EMPLOYEES: Dr. Robert K. Burns (left), University of Chicago, and Dr. John J. Wittmer (right), Consolidated Edison Co. of New York, Inc., will deliver the two major addresses during employee relations session on Wednesday

W. Paul Jones, president, Servel, Inc., Evansville, Ind., will discuss another phase of selling in his speech "The New Sales Potential of the Gas Industry," at the Tuesday morning session.

Another colorful annual event on the Tuesday morning program is the presentation of annual awards for distinguished individual and company achievement. The ceremony this year will include presentation of the Distinguished Service Award, Meritorious Service Award, Beal Medal, Gas Summer Air Conditioning Progress Award, Home Service Achievement Award, and Gas Heating Progress Award.

Tuesday afternoon will be given over to Sectional meetings and activities. The Industrial and Commercial Section will hold a luncheon meeting at the Rose Room, Hotel Traymore, at 12:30 PM on Tuesday, October 3. D. W. Reeves, general sales manager, Oklahoma Natural Gas Co., and chairman, Industrial and Commercial Section, will open the general meeting of the Section at 2 PM.

The Accounting Section will give a luncheon at the Rutland Room in Haddon Hall at 12:30 PM, Tuesday, with John H. W. Roper, Washington Gas Light Co., and chairman of the section, presiding.

The Customer Activities Group and the General Activities Group of the Accounting Section will hold meetings on Wednesday morning in Rooms 20 and 21 of the Auditorium. E. R. Eberle, Public Service Electric and Gas Co., Newark, N. J., and B. S. Rodey, Jr., Consolidated Edison Co. of New York, Inc., will preside at these meetings.

The Operating Section will hold its first meeting Tuesday afternoon in Room B, at the Auditorium. On Wednesday morning the Section will reconvene in Room B. A third Operating meeting is slated for Thursday afternoon.

On Tuesday, October 3, at 2 PM, the Residential Gas Section will hold a meeting at the Auditorium ballroom, with H. P. Morehouse, Public Service Electric and Gas Company, presiding as Section chairman.

(Details of the Accounting, Industrial & Commercial, Operating, and Residential meetings are presented this month in the various sections of the MONTHLY).

On Wednesday, October 4, the Residential Gas Section and the Industrial and Commercial Gas Section will sponsor a joint meeting at the ballroom of the Auditorium, with Mr. Morehouse and Mr. Reeves, respective section chairmen, presiding at the meeting. G. A. Saas, Indianapolis, Ind., will offer "The Thirteenth Doughnut." Leon Ourusoff, Washington Gas Light Co., will introduce F. A. Kaiser, vice-president, Detroit-Michigan Stove Co., whose demonstration, "Mr. Flameless and Mrs. Flame" is a hard-hitting answer to some of the unfair charges and statements being made by competition. Dr. J. L. Rosenstein, Loyola University, a powerful and moving speaker, will speak on a

Schedule of events for 1950 A.G.A. Convention

Monday, October 2

9:00 am	Appliance Exposition opens; closes 6 pm, Monday to Thursday, open 9 am to 2 pm Friday
10:00 am	Joint meeting, Natural & Manufactured Gas Departments
2:00 pm	General session
9:00 pm	President's Reception and dancing

Tuesday, October 3

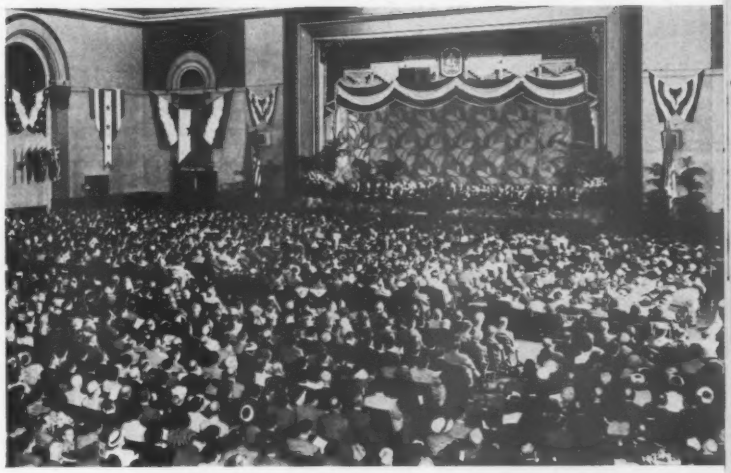
10:00 am	General session
12:30	Luncheon meetings—Industrial & Commercial, Accounting
2:00 pm	Separate meetings of four A. G. A. Sections
2:15 pm	Ladies party

Wednesday, October 4

8:00 am	Home Service Breakfast
10:00 am	Joint meeting, Residential-Industrial & Commercial Sections • Operating session • Home Service Round-Table • Employee Relations • Parallel Accounting sessions
9:00 pm	Stage show and dancing

Thursday, October 5—Dealer Day

10:00 am	General session
2:00 pm	Dealers' meeting • Operating session
9:00 pm	Stage show—Dealer, Manufacturer, Utility Night



proposal "If Salesmen Could Choose Their Sales Managers." "Natural for Industry" is one of the best industrial gas development color films ever made. It will be shown with an introduction by Franklin T. Rainey, vice-president, East Tennessee Natural Gas Co., Knoxville, Tennessee.

Tuesday afternoon at 2:15 is the time set for the Ladies' Party. An enjoyable program has been arranged to take place at the Trimble Room, Claridge Hotel.

The Home Service Committee will hold its Home Service Breakfast at 8:00 AM, Wednesday in the American Dining Room of the Hotel Traymore. Irene L. Muntz, Rochester Gas & Electric Corp., chairman of the Home Service Committee, will preside. Hugh H. Cuthrell, A. G. A. president, and H. P. Morehouse, chairman of the Residential Gas Section, will tender greetings. Keynote speaker at the breakfast will be Mrs. Bj Kidd, vice-president, Lewis & Gilman Advertising, Inc. "Bj" has achieved national fame as one of the nation's leading feminine advertising experts and her talk, "Just Like A Woman," is expected to be most entertaining and valuable. A ceremony accenting a quarter-century of home service will conclude the breakfast program.

Following breakfast, the Home Service Group will adjourn to the Rose Room at the Traymore for a round-table discussion led by Miss Muntz. Isabel McGovern, Minneapolis Gas Co., will discuss "What Pans Out In Baking." Louise Winslow, television home economist for The East Ohio Gas Co., will speak on television techniques. Mrs. Maxine Livingston, *Parents'* Magazine, has gained a wealth of knowledge on home building through the Expandable Homes project of her magazine. She will discuss "New Homes for New Customers." Gladys B. Price, Southern California Gas Co., an authority on home service demonstrations, will review some pertinent truths in her talk, "Little Things That Count."

Employee relations

Because of the importance of employee relations in present day operations, the A. G. A. Personnel Committee will hold a Convention session in Room A, in the Auditorium at 10:00 o'clock on Wednesday morning. L. A. Brandt, The Peoples Gas Light and Coke Co., chairman of the Personnel Committee, will preside. In order to permit ample time for floor discussions, only two subjects have been scheduled. Dr. Robert K. Burns, University of Chicago, will discuss "Employee Relations and Management in a War Economy." In the present condition of world affairs, his views on the value of employee relations in times of war or near war should be opportune. Dr. John J. Wittmer, Consolidated Edison Co. of New York, Inc., will be the second speaker at the employee relations session. His address, "Are 'Greybeards' White Elephants?" will cover the increasingly important problem of management's attitude and policies concerning elderly workers.

All meetings possible will be held in the Atlantic City Auditorium. No meetings have been scheduled for Wednesday afternoon to allow time for delegates to visit the GAMA Exposition of Gas Appliances and Equipment, which promises to be the greatest display of gas appliances and equipment ever staged under one roof.

On Wednesday evening, the Convention Committee has arranged another recreational program, featuring dancing and music by a "name-band" at the Auditorium Ballroom.

General sessions meetings will be resumed on Thursday, October 5, at the Auditorium. Stanley H. Hobson, president, Gas Appliance Manufacturers Association, and president, George D. Roper Corp., Rockford, Ill., will open this session. The title of Mr. Hobson's talk will be "Spike Driving With a Tack

Hammer."

Socialism and nationalization of industry are basic social and political trends in America. Utilities are one of the first targets in such socialization campaigns. James F. Oates, Jr., chairman, The Peoples Gas Light & Coke Co., Chicago, in a keynote address on Thursday, will point out the necessity of rendering superlative service in order to retain public favor. "Levelling Hills and Valleys Is In The Public Service" is the subject of Mr. Oates' discussion. He will represent the Industrial and Commercial Gas section on the general sessions program.

The Residential Gas Section has selected W. L. Hayes, Montana-Dakota Utilities Co., Minneapolis, Minn., as its representative on the general program. Mr. Hayes has a background of 35 years in utility sales work, 25 of them as a sales manager. His title will be, "Keeping the Public Sold on Gas—An Industry Responsibility."

Another speaker will be announced later to fill out the program at the Thursday General Session. Election of officers is also slated for Thursday morning.

Thursday, October 5, has been designated as "Dealer Day", and an interesting program for gas appliance dealers is being arranged by A.G.A., GAMA, and National Appliance and Radio Dealers Association. *(For further details, turn to the Residential Gas Section, in this issue of the* MONTHLY).

A special program of recreation and amusement has been arranged for the dealers on Thursday evening, October 5. Thursday evening has been designated as Dealer, Manufacturer, and Utility Night. Arrangements have been made with the Seaview Country Club and Atlantic City Country Club for extending golf courtesies to delegates attending the Convention.

Advance hotel reservations have established a new record and members are advised to get reservation blanks from A. G. A. Headquarters at once, to insure a favorable selection of rooms.

The registration fee will be $10 and the main registration desk in the lobby of the Auditorium will be open Sunday afternoon, October 1, for early arrivals, and during the Convention. The registration badge with the wearer's name will be required for entry to any of the Convention events. Members can register in advance through their companies or directly to A. G. A. Headquarters in New York and avoid waiting in line at the Convention.

Through the courtesy of GAMA a visual registration list will be on display at the Auditorium. Names of conferees will be added to this list immediately after registration. A printed daily list also will be available. As in past years, the *Caloric Chronicle,* a daily convention newspaper, will be published through the courtesy of Caloric Stove Corp., Philadelphia.

Recreation for all at gas industry convention

Bud Sweeney

Marguerite LaPorte

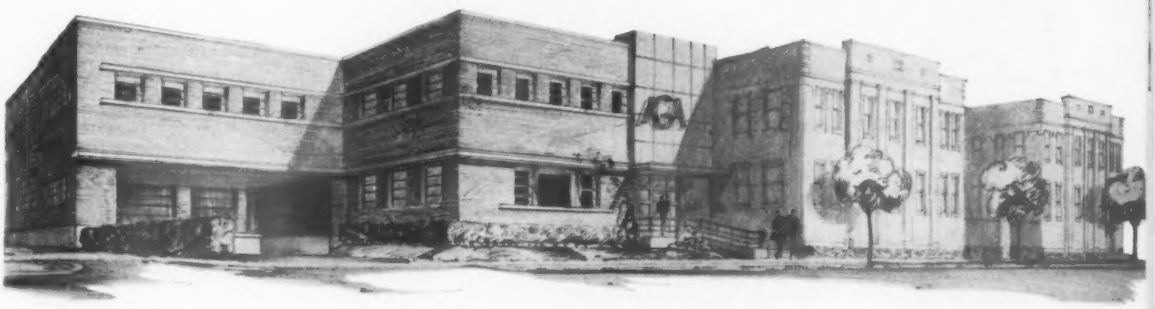
Joe Stern

The Janette Hackett Review

- Bud Sweeney will put his colorful personality to work as master of ceremonies during one of the evening programs, in the Atlantic City Auditorium
- Marguerite LaPorte, international glamor girl, will be a feature attraction on Thursday evening, designated as Dealer, Manufacturer, Utility Night
- Joe Stern and his Boardwalk Favorites will provide the music for evening recreational events and also for the Ladies Party on Tuesday
- The Janette Hackett Review, glamorous dancers who will appear during the stage shows on Monday and Thursday evenings

Planned addition will help to relieve crowded conditions in Cleveland

A.G.A. Laboratories expanding



American Gas Association's main Laboratories in Cleveland, Ohio will look like this when construction of an adjoining two-story addition (shown above at left) is completed

Commemorating the twenty-fifth anniversary of the founding of American Gas Association Laboratories and the launching of its Approval Plan for gas appliances, plans have been completed for construction of a new two-story building adjoining the main Cleveland Laboratories. Ground will be broken shortly, barring any delays due to possible material allocations.

Upon completion, the new building will provide more than 20,000 additional square feet of floor space over present plant facilities, thus relieving the crowded conditions which have prevailed for a number of years. It will be the first permanent addition to be made to the present structure erected in 1928.

Authorized by the Executive Board of American Gas Association on recommendation of its Laboratories Managing Committee, the new structure will cost approximately $250,000 upon completion. Only the first floor will be finished at present, at a cost of approximately $175,000. This figure includes the cost of additional land for parking facilities. Total plant floor space will be increased from approximately 30,000 square feet to slightly more than 51,000 square feet.

A. G. A. Laboratories activities and services have increased steadily in scope and volume during the past quarter century. This growth has been at a greatly increased tempo during the past several years when successive new records were set for the number of appliances tested and approved. Many gas appliance manufacturers, officers of Gas Appliance Manufacturers Association, and members of the Laboratories Managing Committee, believe that the testing load will continue at a high level for the next several years. However, even a cut back from the peak would require testing operations at levels far above those already experienced.

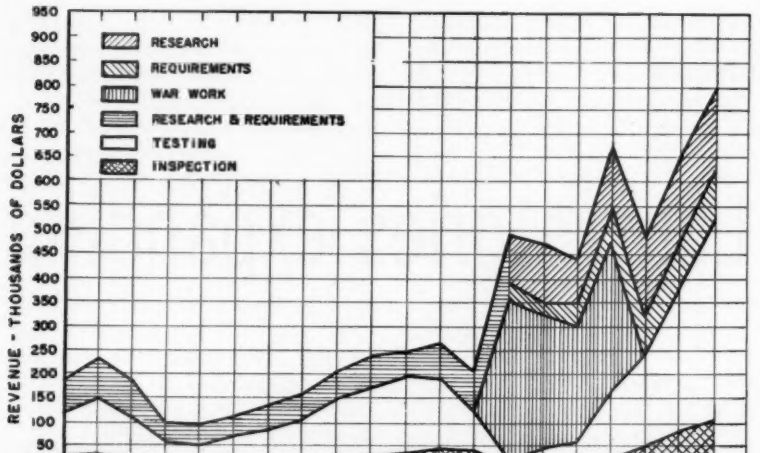
The upward trend of Laboratories services of all kinds is graphically shown in the accompanying chart covering the last 20 years.

From time to time after the establishment of the Laboratories in its own quarters in 1928, plant facilities were expanded to meet needs. In 1930 the Pacific Coast Branch was opened in Los Angeles in rented quarters. Ten years later a modern laboratory building was erected and occupied. Near the close of World War II, with building activities restricted, Cleveland space limitations were relieved by converting an adjoining dwelling into a temporary research annex. In 1948 Pacific Coast facilities were expanded by the purchase of an adjoining building which is expected to accommodate West Coast needs for years to come.

Space limitations have been pressing in Cleveland since 1946 when the present sharp upward trend in the volume of work became evident. At present, 40 or more manufacturer representatives visit the Laboratories each day in connection with the testing of their equipment for approval. Many of them have had to work on the test floor since manufacturer's rooms for their accommodation are so limited in number. Departments other than testing also have had to carry a correspondingly larger work load and have become greatly overcrowded.

During 1949 a total of 3,454 approval tests were conducted in Cleveland, an increase of 47.6 percent in testing activities over the previous year. The number of manufacturers submitting appliances increased by 25 percent. This upward trend has continued during 1950.

Reference to the chart shows that the prewar peak in testing activities began to be surpassed in 1946. The number of manufacturers served, as indicated by the number listed in the Directory of Approved Gas Appliances and Listed Accessories, rose from 311 in 1946 to 799 for January 1950. An appreciable increase in service beyond that indicated by the figures was experienced due to the



Laboratories activities and services have grown steadily in scope and volume

fact that so many of the manufacturers were new to the industry. New manufacturers require more service and encounter more difficulties in obtaining approval than those who are established and relatively skilled in the art.

The great increase in the number and types of approved gas appliances on the market naturally has influenced inspection activities of the Laboratories. With such equipment offered in a variety of models, a corresponding sharp expansion in inspection activities took place. This has required the doubling of the inspection staff and a large increase in the amount of correspondence and record keeping involved.

One important factor increasing the work load has been a decided trend toward obtaining approval for interchangeable sets of controls for the same appliance. Another factor has been extension of approval to many dealers, distributors and similar organizations distributing appliances under their own names, and the manufacture of appliances by one or more manufacturers for another.

Expansion of natural gas into new territories, renewed activity in the housing and low-priced home field, and development of new types of gas appliances and automatic controls are among the factors that have influenced not only testing operations but other Laboratories departments as well. They have brought about an increase in requirements committee work, have stimulated the need for accompanying technical investigations, and made necessary a number of research projects along related lines. It is probable that these activities will increase. Research and requirements investigations presently are conducted in inadequate quarters due to the press of testing demands.

The accompanying sketch shows the exterior of the new building and the manner in which it will directly tie into the original structure at the right. It will occupy in part the present site of the Research Annex.

The shipping dock, seen in the sketch, at present is located in the rear of the existing building. Moving the dock to the front of the new structure along with a large adjacent area devoted to storage will greatly improve shipping, receiving and storage operations. Storage in particular has been an acute problem.

In addition to adequate storage facilities, the new first floor will contain the description section of the testing department, the machine shop, space for 20 additional manufacturer's rooms, and lounges for manufacturers and other visitors. Storage space will be doubled and the space devoted to manufacturer's rooms increased from 1,320 square feet to 4,020 square feet.

The entire first floor of the existing building will be devoted to testing activities, about doubling the present space devoted to this purpose. General offices, as well as the library and conference room, will be relocated on the second story of the new building when this floor is finished. Provisions also have been made for a meeting room large enough to accommodate the entire staff.

The former general offices will be used for needed office expansion for the testing, inspection and research departments. Research projects and requirements investigations will be conducted in the remainder of the existing second floor.

Building plans have been drawn to provide expansion of facilities as economically as possible and at the same time to facilitate the flow of work along efficient lines. Only a minimum of piping and other laboratory equipment will be needed in the new building since testing and research operations requiring such facilities will be concentrated in the existing structure where they are already provided.

Utility gas sales increase in June

TOTAL SALES OF GAS by utilities to ultimate customers in June 1950 were 2,926,174,000 therms, an increase of 18.3 percent over 2,474,414,000 therms sold in June 1949, American Gas Association has reported. For the 12 months ended June 30, 1950, total sales of gas amounted to 38,956,370,000 therms, a gain of 11.9 percent compared with 34,809,449,000 therms sold in the comparable period a year earlier. The Association's index of gas sales for June, 1950 was 279.2 percent of the 1935-1939 average.

Natural gas sales in June 1950 totaled 2,679,562,000 therms an increase of 20.4 percent over 2,226,105,000 therms sold in June 1949. For 12 months ended June 30, 1950, natural gas sales were 35,488,547,000 therms, up 13.2 percent over 31,363,860,000 therms sold a year earlier. The index of natural gas sales for June 1950, was 303.1 percent of the 1935-1939 average.

Total sales of manufactured gas during June 1950, were 152,222,000 therms, a decrease of 6.7 percent under 163,160,000 therms sold in June 1949. For 12 months ended June 30, 1950, manufactured gas sales totaled 2,257,187,000 therms, an increase of 0.3 percent over 2,250,696,000 therms sold in the same period a year earlier. For June 1950, the index of manufactured gas sales was 135.5 percent of the 1935-1939 average.

During June 1950, 94,390,000 therms of mixed gas were sold, an increase of 10.9 percent over 85,149,000 therms sold in June 1949. For the 12 months ended June 30, 1950, total sales of mixed gas were 1,210,636,000 therms, an increase of 1.3 percent over sales of 1,194,893,000 therms sold in the 12 months ended June, 1949.

News notes on preparedness

• *Gas industry mobilizing vast resources to help keep American economy strong*

America's sprawling gas industry is ready, should the present international crisis continue to develop, to at least equal the tremendous service records it set during World War II. The natural and manufactured gas industry with more than 23,800,000 customers, already is well along in its plans to back up the national preparedness program. Stemming directly from action taken at a meeting of the Association's Executive Board on July 12, 1950, a number of preparatory steps have been taken to prepare the gas industry for any eventuality on the international scene. Here are some of the most important industry developments:

Initial meeting of A. G. A. National Defense Committee: (Left to right around the table) E. H. Eacker, president, Boston Consolidated Gas Co.; Harland C. Forbes, executive vice-president, Consolidated Edison Co. of New York, Inc.; E. J. Boothby, president, Washington Gas Light Co.; Alexander Macomber, president, Gas Service, Inc.; George H. Smith, A. G. A.; J French Robinson, president, The East Ohio Gas Co., committee chairman; Joseph Bowes, president, Oklahoma Natural Gas Co.; D. A. Hulcy, vice-president of A. G. A.; Eskil I. Bjork, vice-president, The Peoples Gas Light & Coke Co.; George S. Young, executive vice-president, The Columbia Gas System, Inc.; William G. Maguire, (far right) chairman of board, Panhandle Eastern Pipe Line Company*

A. G. A. National Defense Committee appointed to cope with national emergency problems related to the gas industry and provide effective support of the government in the current crisis. J French Robinson, president, The East Ohio Gas Co., Cleveland, and a past-president of A. G. A., is chairman of this new 12-man group.

Meeting at A. G. A. headquarters in New York on August 24, the Defense Committee studied over-all estimates of the industry's steel requirements for gas distribution. Estimates have been determined by a special A. G. A. survey of member companies. Final data from this survey will be coordinated with data obtained by National Petroleum Council on natural gas production and gathering requirements. N. C. McGowen, United Gas Pipe Line Co., Shreveport, La., is chairman of the council's committee on natural gas transportation and steel requirements. Also considered by the Defense Committee was a long list of preparedness activities directed by the A. G. A. War Activities Committee which guided the gas industry's powerful effort during World War II. At the top of this list are manpower, national nutritional problems, war protection of gas plants and personnel, conservation and salvage of essential materials, and adequate gas supply for defense industries.

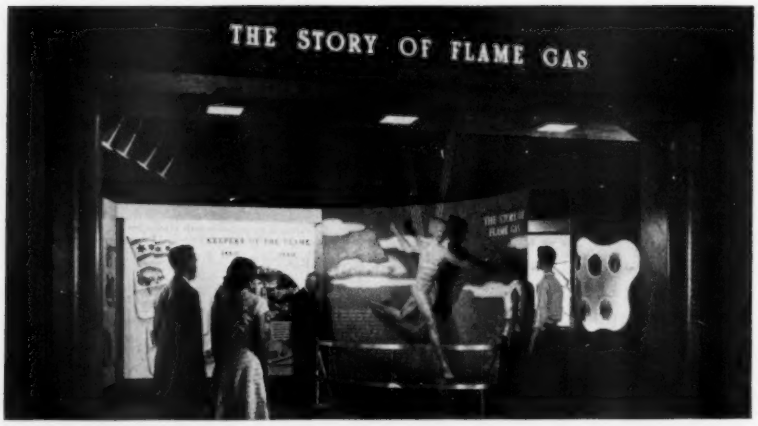
Public utilities committee organized to study wartime tax regulations. This group is a joint subcommittee of the Taxation Accounting Committee of American Gas Association and Edison Electric Institute. Its purpose is to evaluate factors involved in the calculation of excess profits and war taxes on public utilities during World War II. The committee will be prepared to offer any aid that may be requested by legislative or revenue authorities concerning the tax treatment of public utilities, in the event that new tax regulations result from the present international situation. Ten public utility accounting and taxation experts will sit on the committee. H. W. Ziethen, The Peoples Gas Light & Coke Co., Chicago, and C. J. Trudeau, Wisconsin Electric Power Co., are co-chairmen.

Preliminary report on excess profits taxation, prepared by the joint committee on taxation of A. G. A. and EEI, was considered and approved by the A. G. A. Defense Committee at its August 24 meeting.

Gas Appliance Manufacturers Association is surveying its members on their requirements for steel, copper, brass and aluminum in all classifications. Results of this study will be correlated with the A. G. A. steel study.

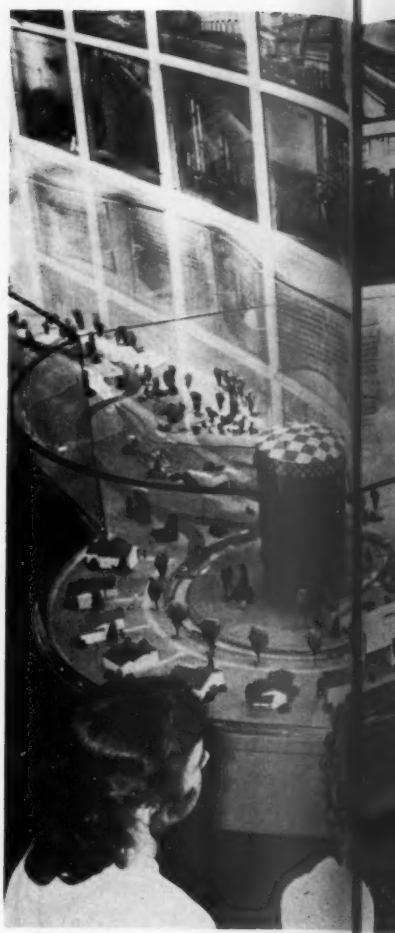
Southern Gas Association has scheduled three conferences to review and discuss plans and problems relating to the Korean war and the national preparedness program. September 14 and 15—distribution management confer- *(Continued on page 45)*

*Arthur F. Bridge, president, Southern Counties Gas Co., Los Angeles, and N. Henry Gellert, president, Seattle Gas Co., Seattle, Washington, not shown in picture.



Six-foot sculptured figure of Prometheus carrying stolen fire to the human race introduces visitor to 21-unit gas industry exhibit which will be dedicated by The Peoples Gas Light & Coke Company in observance of 100 years of gas service in Chicago

By pressing button, the visitor sets in motion mechanism which, with controlled gas flame, brings winding steel strip to predetermined degree of hardness and ductility



Scale unit depicts principal installations of modern gas utility with mixed gas sendo

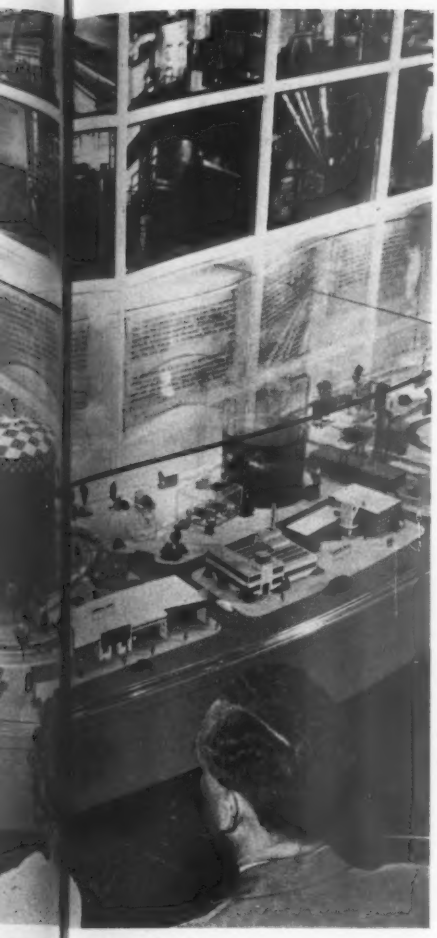
Historical exhibit tops Chicago gas centennial

Local utility company donates to the public 21-unit display "The Story of Flame Gas"

ALL of Chicago has been invited to share in the centennial birthday present—a complete gas industry museum exhibit of 21 units—which The Peoples Gas Light and Coke Company will unveil for the public on the evening of September 7.

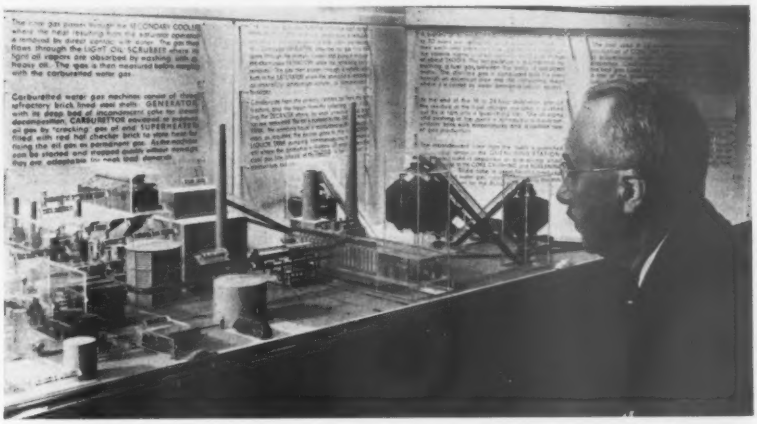
Dedication of the $100,000 exhibit at Chicago's Museum of Science and Industry will be a highlight event of the observance by Peoples Gas of the 100th anniversary of gas service in Chicago. The gas was first turned on in that city on the night of September 4, 1850, and service has continued without interruption ever since.

During the month prior to the exhibit opening, the company has been mailing special invitations to all customers at the rate of more than 45,000 daily. The invitations have been enclosed in the company's regular mailings to its nearly one million customers.



Unit showing dual long-distance natural gas lines, major gas plant and other installations

Modern residential air conditioning system shows how flame gas, by pressing control button, heats or cools the home. Air register alternately plays humidified, warmed air and cooled, dehumidified air on visitor. Background traces heating and cooling cycle



Three-dimensional pictorama of coke oven and carburetted water gas plant, part of display on how natural gas is produced and transmitted to manufactured gas center

The exhibit will be thrown open to the public on September 8. It will be maintained by Peoples Gas as a permanent part of the Museum of Science and Industry, which annually attracts more than 1,500,000 visitors of all ages.

James F. Oates, Jr., chairman of Peoples Gas, will formally present the exhibit to Major Lenox R. Lohr, museum president, at a dedication dinner in the museum rotunda on September 7.

Numbered among the 500 prominent guests who will attend will be a special committee composed of five past-presidents of American Gas Association. The five were designated by Hugh H. Cuthrell, current A. G. A. president, to serve as representatives of the gas industry at the Chicago centennial observance.

The industry committee is composed of Everett J. Boothby, president, Washington Gas Light Co., Washington, D. C.; R. H. Hargrove, president, Texas Eastern Transmission Corp., Shreveport, La.; Robert W. Hendee, president, Colorado Interstate Gas Co., Colorado Springs, Colo.; Hudson W. Reed, president, The Philadelphia Gas Works Co., and J French Robinson, president, The East Ohio Gas Co., Cleveland, Ohio.

A resolution was adopted at the 1949 A. G. A. Convention in Chicago last October providing for the appointment of a committee to attend the museum exhibit opening.

It stated in part, "that the executive board of the American Gas Association hold its early 1950 fall meeting in Chicago as a token of appreciation in the establishment of the gas industry exhibit at the Chicago Museum of Science and Industry by The Peoples Gas Light and Coke Company and that a special committee of five distinguished leaders in the American gas industry, who are nonresidents of Chicago, be appointed by the president to represent the A. G. A. at the dedication of the exhibit."

Other guests at the ceremony on September 7 will include many persons prominent in the civic, business and professional life of Chicago.

The centennial observance is being directed by a Peoples Gas planning and coordinating committee headed by Francis X. Mettenet, vice-president, and the following members: Remick McDowell, assistant to the chairman; Philip E. Eddy, vice-president; Clayton G. Cassidy, advertising director, and Harry Swenson, director of the display and home planning bureau. Mr. Swenson coordinated and directed the project.

Preliminary work on the exhibit was begun almost two years ago with the drafting of a scenario and the drawing of first plans for the various display units.

Twenty permanent units make up the

This exhibit showing vital installations of Chicago distribution system uses illuminated cut-away model of typical Peoples Gas holder of 15 million cubic foot capacity

exhibit. An additional unit, which will be removed at the close of the centennial year, is a large panel depicting the historical highlights of the 100 years in which gas has served Chicago.

In all, the exhibit covers approximately 2,400 square feet of floor space and fills a full-sized display room on the ground floor of the big museum building.

Designed to appeal to visitors of all ages and all interests, the Story of Flame Gas presents its educational story in a comfortable atmosphere that has been achieved through a combination of friendly color, flowing architectural lines and cheerful, functional lighting.

Units are grouped within five categories: historical, production of natural and manufactured gas, utilization by residential, industrial and commercial customers, the physics of the industry together with research and testing, and distribution.

The exhibit traces the development of flame gas from prehistoric man's first discoveries of the phenomenon of burning natural gas down to present-day use.

To achieve the broadest possible interest, strong emphasis has been placed on the utilization phase of the industry. Care has been taken to place before the spectator many of the representative uses for gas in the home, in industry and in commercial establishments.

Gas appliances and processes are graphically demonstrated with attractive working models. Several units contain mechanisms which are operated by the spectator by simply pressing a button.

These include a display which automatically hardens, cools and anneals a band of steel as the visitor looks on; a gas refrigeration unit which operates behind a glass panel; an air conditioning unit which, at the press of a button, plays warmed and then cooled air upon the spectator; the working parts of an automatic water heater, and a glass-enclosed meter, the bellows of which can be seen in operation as the gas is being measured.

The visitor is given a classical introduction to the exhibit by a striking six-foot figure of Prometheus, the legendary benefactor of mankind, carrying stolen fire to the human race. The racing figure of Prometheus was fashioned from solid bleached mahogany by Chester Kirk, a Chicago sculptor. This unit re-enacts the legend which credits Prometheus with stealing fire from Zeus, who had sought to supplant the human race, and carrying the flame to man for his use.

It bears this legend:

"The classic myth Prometheus, the Titan who brought to man the Olympian fire as the one gift that would make man superior to all living things on earth, is a fitting beginning to the drama of man's mastery of fire.

"In modern reality gas engineering produces the gas flame to serve man as a faithful friend and obedient servant."

Man's early encounters with the flame are dramatically recounted in a series of illuminated translite paintings which point out that "The Story of fire is an epic of man's unremitting effort to make the flame serve him in a thousand ways."

The vital scientific contributions of five early-day European scholars whose work made the first practical uses of gas possible are recounted in illuminated discs illustrating the discoveries of John Baptiste van Helmont, Antoine Laurent Lavoisier, Jean Pierre Minkeleers, William Murdock and Robert Wilhelm von Bunsen. These discs, which accurately portray the features of most of the principals, were painted by Herbert H. Field, of Chicago.

Most spectacular of all the units is an elaborate three-dimensional pictorama of the production and distribution facilities of a modern integrated gas system. This reconstructs the facilities of a system such as Peoples Gas, the sendout of which is a mixed gas of 800 Btu content.

Model installations, carefully built to a scale of $\frac{1}{8}$ inch to one foot, take the gas from flowing wells in the Texas Panhandle and from coke ovens and carburetted water gas sets to the doorsteps of city customers.

The principal production machinery necessary for producing and mixing manufactured and natural gas is depicted in detail.

Model pipelines shown

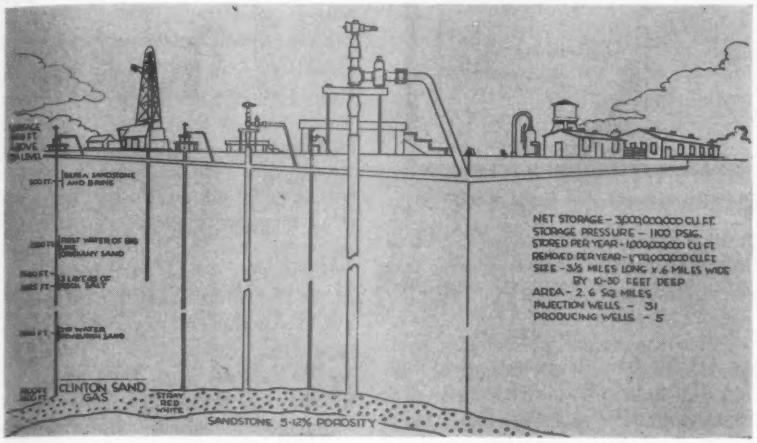
Tiny gas wells are reconstructed on a Texas landscape. Field gathering lines and booster stations show how the natural gas is moved to processing stations to be fed into twin high pressure pipelines for long distance transmission. The model underground pipelines, built of colored glass tubing, traverse a typical southwest terrain and cross tiny rivers and streams en route to a distant city.

A scale model compressor station shows the types of buildings and machinery required at one of these installations along the pipeline. Transparent model structures permit the visitor to view the machinery in buildings such as a compressor house.

The model system reconstructs the machinery and processes typical of a large gas manufacturing plant. Transparent building installations show how gas is produced in a battery of coke ovens and in *(Continued on page 28)*

Underground storage and migration of gas

▲ Figure 1. Pressure gauge attached to a christmas tree records the rock pressure on a typical well



◀ Figure 2. Diagram showing connections from compressor station to gas wells and storage sands and other data on Chippewa area

By F. E. VANDAVEER[1] and J. J. SCHMIDT[2]

The East Ohio Gas Company
Cleveland, Ohio

Underground storage of natural gas is being widely used for a number of purposes, but its primary advantages are to meet peak loads, to prepare against pipeline failures, to permit a good transmission pipeline load factor, and to provide for the house heating load.

Underground storage is of increasing importance to natural gas utilities in the northern and western sections of the United States receiving gas from the south. It will, no doubt, receive more attention by pipeline companies, and by manufactured gas companies in the East which are scheduled to obtain natural gas within the next few years. The largest gas holders of steel construction soon become too small except for short periods of peak demand.

Where local conditions are favorable to the development of underground storage so that natural gas may be used the year around many technical problems are eliminated. These might be listed as: (1) interchangeability and mixing problems are avoided; (2) procurement of new supplies of fuel during the winter is unnecessary; (3) reforming processes, if used, can be stabilized; (4) if straight natural gas is used, there is no loss of energy (no gum formation, no nitric oxide formed, and no scrubbing needed) as there is in the reforming operation.

A few historical facts will indicate that there is a wealth of experience on underground storage projects. Undoubtedly, a great deal more is known about this subject by operating company personnel than has been published to date. It is reported by E. G. Dahlgren[1] that the first known successful underground storage of natural gas was in Welland County, Canada, in 1915. A second storage was established in the Zoar Field near Buffalo in 1916. Three years later the Menifee Field[2] in Kentucky was started and is still in operation. In 1929 Cities Service established a storage project in Kansas and to 1940 nineteen storage fields were started.

In 1940 the Natural Gas Section of American Gas Association held a symposium on Underground Storage at its spring meeting at which experiences[3, 4, 5, 6, 7, 8] of a number of companies were related. These reports were so favorable that from 1940 to May, 1949 some 54 additional fields[2] were established. According to Ball,[2] 80 fields are now in use and 14 more are being prepared for use. Some 615 billion cubic feet of gas has been stored in them to date and 429 billion cubic feet withdrawn. Eighty-five fields reported[2] have a rated capacity of 497.3 billion cubic feet.

Storage of gases underground is not limited to natural gas. More than 50 million cubic feet of helium[1] has been stored underground by U. S. Bureau of Mines in the Cliffside Field in Texas. Millions of cubic feet of propane-air[9, 10] and propane-air natural gas mixtures have been stored underground by Michigan Gas Storage Company in Michigan.

It is reported[11] that oxygen in this mixture, about 2.3 percent, almost completely disappeared—only a trace remaining in the exit gas. Billions of cubic feet of coke oven gas[12] have been stored underground and recovered without any

Abridged version of talk presented at A.G.A. Production and Chemical Conference in New York, N.Y., May 22-24, 1950.

[1] Director of laboratories.
[2] Superintendent of gas production.

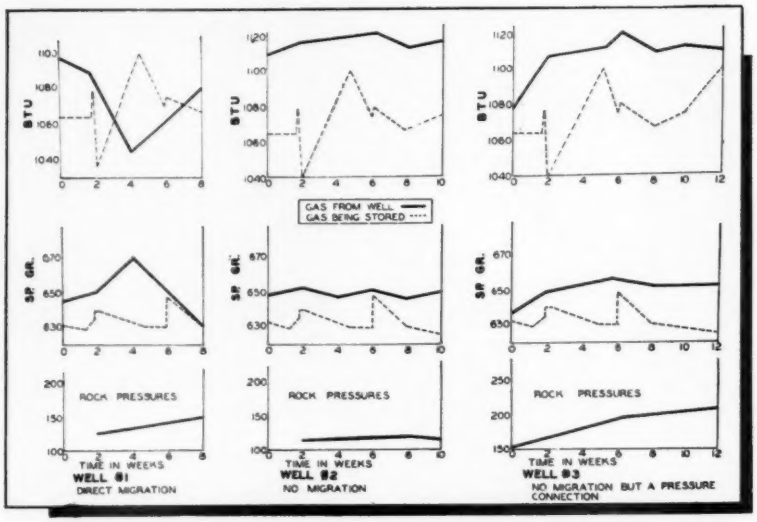


Figure 3. Typical Btu and Sp.Gr. curves of gas from test wells and those of gas stored

loss. It was stated that when unpurified coke oven gas containing hydrogen sulfide was stored there was a gradual decrease of this impurity in storage and a purer gas was withdrawn than was pumped into the wells. Also, that there was a slight increase in heating value of gas withdrawn. Nitric oxide is being removed from the coke oven gas to prevent formation of vapor phase gum and possible plugging of the wells. Coke oven gas contains carbon dioxide, nitrogen, hydrogen, carbon monoxide, methane, ethane, and unsaturated hydrocarbons. Therefore, this experience of Carnegie-Illinois Steel Corporation[12] at McKeesport, Pa., means that any of those gases can be stored underground. This applies as well to other mixtures of these gases, such as may be contained in manufactured fuel gases from water gas, carburetted water gas, and oil gases.

Other papers than those already mentioned dealing with the storage of natural gas underground have been presented during the past three years. These are listed in references 13-26, inclusive.

There are several possibilities for developing underground basins for storage of gas. Some of these are being used, others are being studied. Still others appear worthy of consideration. One or more of them could probably be used in any section of the country if the need is worth the effort. Underground storage does not have to be confined to gas or oil fields. A brief resume of six possible structures for underground storage is given below:

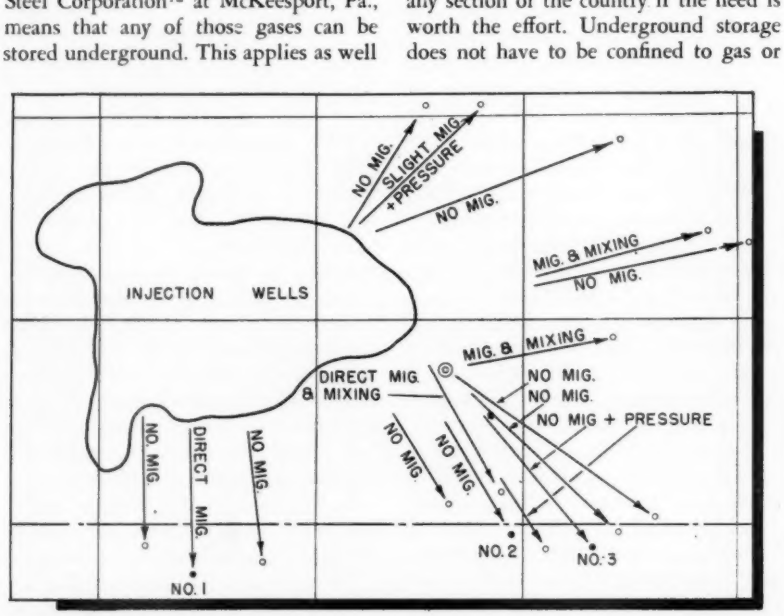


Figure 4. Map of storage area showing degree of migration and data from individual wells

(1) *Depleted or partially depleted dry gas fields.* Most of the underground storage pools developed to date have made use of wells in dry gas fields. This is logical as the wells are already drilled, the performance as to capacity and deliverability is known, and earth structure is known from drilling logs and other records. In addition, the gas tightness of the field up to the original rock pressure has been demonstrated.

(2) *Depleted or partially depleted oil fields.* One field (Playa Del Rey in California) still producing oil is also being used for gas storage. The reservoir space now in use for gas storage was originally wholly filled with oil. It can be expected that an underground structure which will retain oil under pressure for centuries will retain gas also. The limits of gas volume and pressure would have to be determined and controlled within reason.

(3) *Excavations in sandstone, other rock layers, or coal seams.* A mining operation to create a gas tight holder in a rock layer, or the use of a natural cave, is an intriguing possibility. Sale of the stone or coal removed might be sufficient to retire the cost of the mining operation. A gas-tight holder of any desired size could be created in this manner.

(4) *Cavities in salt layers.* In those states where there are underlying strata of salt, cavities of known size could be made rather easily. The salt could be removed with water by methods now widely used for salt manufacture. This method of creating an underground storage would be relatively inexpensive, particularly if the salt brine were sold or converted to salt. Underlying the entire northeastern third of Ohio[27] and extending into Pennsylvania and New York State there are great layers of salt. And there are known salt deposits in eleven other states. An unknown factor in this method is whether the roof would cave in.

(5) *Steel pipe or bottles buried underground.* Steel pipe[20, 24, 26] or bottles strong enough to hold gas under 2,000 psi or more buried underground are being used for special purposes. This method is relatively expensive and is limited in capacity. Problems of corrosion of the pipe, compression of the gas to high pressure, removal of all water vapor to avoid hydrate formation and freezing are involved in this method.

The primary *(Continued on page 46)*

Fall drive expected to help nation maintain stable American economy

'50 Round Up off to fast start

a PAR activity

Farsighted gas men are determined that in event of a continuing national emergency the gas industry will not make the mistake of "closing up shop" and releasing its best-trained sales personnel. Instead, the Association's major promotional efforts such as the 1950 Old Stove Round Up will concentrate on keeping the public sold on the advantages of modern gas service.

War or no war—the 15 million gas ranges that are ten years old or older will continue to be the greatest competitors of modern gas service so long as they remain on the lines. With this in mind, the Round Up opened on September 1 as originally planned.

Provision has been made, however, for the possibility that "scare buying" and other factors may have depleted appliance inventories in some sections of the country.

Campaign portfolios, dealer training booklets, and a variety of other aids have been mailed to the industry by the A. G. A. Promotion Bureau. Late reports to the Bureau indicate that a large number of member companies are proceeding with plans to tie-in with the Round Up. Many of these companies will conduct local promotions as originally planned. Others are switching from the original objective of selling the maximum number of new ranges to replacing the maximum number of the oldest stoves in service. Sales executives are more and more aware that many of their customers still are using old stoves which would hardly last them in event of another major war.

Additional backing for the Round Up will be supplied through A. G. A. national advertising which will appear as previously scheduled in September, and with some modification, in October. November and December advertisements are being reviewed. In any event, the schedule of four-color insertions will be continued.

A dramatic preview of local tie-ins has been provided by three companies which started their Round Ups earlier this summer.

Officials of Alabama Gas Corporation and Atlanta Gas Light Company report impressive results from their kick-off drives. In Tennessee, Nashville Gas & Heating Company provided a colorful introduction for its early Round Up. A mile-long parade with cowboys, cowgirls, a rodeo, clowns, a covered wagon, dealer floats and carnival flavors for the children spearheaded the drive. The parade, which covered the downtown business section, was led by Wade Thompson, president, Tennessee Natural Gas Co., W. H. Ligon, president, Nashville Gas & Heating Co., the local mayor and the president of the Nashville chamber of commerce.

Other companies are tieing-in with the drive through special contests and attractions for consumers and dealers.

Group of gas industry "ranch hands" at meeting of Pacific Coast Gas Association's Range and Refrigerator Council in San Francisco, July 18: (Left to right) Ralph J. Phillips, San Diego; J. E. Kern, PCGA; H. Vinton Potter, A. G. A.; E. Carl Sorby, Rockford, Ill.; F. N. Seitz, Los Angeles; Clifford Johnstone, PCGA, and Jim Graham, Newark, California. The Old Stove Round Up and other industry promotions will help keep the public sold on the advantages of modern gas service

Utilities to expand gas heating load

American gas utilities expect to add more than three million new house heating customers in the next three heating seasons to the 8,250,000 customers who now heat their residences with gas. Canadian gas companies serving 225,000 retail customers hope to add about 13,000 gas house heating customers in the three-year period.

Based on results of a survey conducted by the Association's Bureau of Statistics, gas utilities in America will serve 1,150,000 more house heating customers during the coming heating season than they served last winter. This means a total of 9,400,000 residential gas customers—more than 40 percent of all dwelling units being supplied with utility gas service—are expected to heat their homes with gas during the coming winter.

Information from the survey itself is based on replies from 295 American gas utilities which on April 1, 1950 were serving 19,240,000 residential gas customers, or approximately 90 percent of all such gas consumers in the country. The 1950-51 forecast of 1,013,000 new heating customers compares favorably with last year's total. At that time companies serving approximately 94 percent of the industry announced intentions of adding more than 693,000 residential gas house heating customers during the 1949-50 heating season.

Also surveyed in the 1950 poll were six Canadian companies serving 225,000 customers that expect to add more than 5,000 new gas house heating customers this winter. The same Canadian utilities expect to add approximately 4,000 additional gas house heating customers during each of the two following heating seasons.

American companies participating in the survey indicated that as of April 1,

A. G. A. survey of gas ho

STATE	COMPANIES INCLUDED IN SURVEY Residential Customers April 1, 1950 Total	Householding	ANTICIPATED ADDITIONAL CUSTOMERS '50-'51 Heating Season	'51-'52 Heating Season	'52-'53 Heating Season	Proportion of Industry Covered
TOTAL U.S.	19,747,558	7,217,224	1,013,141	852,683	774,452	90%
Alabama	153,670	91,885	11,155	10,299	8,254	95
Arizona	80,201	72,000	9,700	7,900	6,900	73
Arkansas	37,924	35,039	6,602	6,302	6,137	26
California	2,422,623	2,203,710	131,327	111,527	103,428	96
Colorado	144,079	116,052	9,900	9,300	8,750	91
Connecticut	334,282	11,262	1,396	2,154	3,498	97
Delaware	43,923	2,200	800	400	400	92
District of Columbia	160,476	39,300	20,657	16,565	13,255	100
Florida	114,896	4,225	2,795	2,995	3,005	68
Georgia	201,942	122,515	17,392	17,466	15,030	97
Idaho	0	0	0	0	0	0
Illinois	1,491,252	153,786	32,579	32,021	23,146	94
Indiana	470,689	45,491	13,800	23,125	24,135	89
Iowa	210,546	61,704	22,093	29,280	27,621	80
Kansas	228,211	195,771	12,535	15,975	14,960	67
Kentucky	215,803	103,836	17,561	17,219	8,082	90
Louisiana	279,918	260,034	23,587	24,477	24,632	78
Maine	23,377	746	200	200	200	58
Maryland	343,944	43,220	19,970	25,977	23,890	97
Massachusetts	754,684	38,028	6,011	6,662	11,012	85
Michigan	963,519	256,529	113,518	22,694	17,746	89
Minnesota	295,762	91,203	18,202	16,685	16,535	94
Mississippi	89,082	88,754	5,642	5,769	4,960	70
Missouri	501,207	184,674	69,501	45,912	37,569	93

1950 some 7,217,000 residences were using gas for all house heating purposes. They expect to serve an additional 1,013,000 such customers with gas for house heating this winter, and to add 853,000 and 774,000 house heating customers during each of the two subsequent heating seasons.

These statistics were gathered from American and Canadian companies prior to the outbreak of hostilities in Korea. Any possible steel allocations are not expected to affect seriously plans for the coming heating season but conceivably might curtail the availability of heating equipment for new installations in the following years. On the other hand, it is probable that estimates for the last two years covered in the survey have been understated as some companies were unable to forecast with any degree of reliability beyond coming heating season.

This is the first time that companies have been asked to submit estimates beyond the immediately approaching heating season. It is felt that such additional information will prove particularly valuable in the development of long range forecasts for the industry.

During the last 12 months several new pipelines, or expansions of previously existing lines, were completed thus enabling many natural gas distributing utilities to lift, either wholly or substantially, existing restrictions on additional house heating installations. Furthermore, the availability of natural gas in new areas and continued construction of pipelines can be expected to accelerate still further the addition of new gas heating installations, contingent upon movement of materials as affected by the international situation.

The present and anticipated proportion of residential gas consumers using only gas for house heating naturally varies considerably in different parts of the country. Highest percentage of saturation occurs in the natural gas producing areas of the southwest and California, and the lowest percentage in the manufactured gas areas of the northeast. This relationship is indicated by the accompanying summary which shows for each state the total residential gas customers and house heating customers as of April 1, 1950. Also shown by states are the anticipated additions for each of the three coming heating seasons.

Reporting gas companies indicated that approximately half of the anticipated gas house heating additions will be installed in new dwelling units. The remaining half will represent conversions from other fuels. Due to variations in climate, most of the new heating installations in the northern part of the country will consist of central heating. In the south and southwest the great preponderance of new heating installations will consist of space heaters or floor and wall furnaces.

ating in the U.S., 1950-53

STATE	COMPANIES INCLUDED IN SURVEY		ANTICIPATED ADDITIONAL CUSTOMERS			
	Residential Customers April 1, 1950		'50-'51 Heating Season	'51-'52 Heating Season	'52-'53 Heating Season	Proportion of Industry Covered
	Total	Househeating				
Montana	33,700	31,650	1,800	1,365	1,240	54%
Nebraska	149,524	77,856	12,311	12,501	11,996	93
Nevada	0	0	0	0	0	0
New Hampshire	18,919	452	154	170	513	52
New Jersey	1,065,107	45,356	6,313	7,343	7,283	97
New Mexico	10,328	10,228	776	593	541	14
New York	3,289,915	248,294	37,857	40,792	36,962	100
North Carolina	14,596	118	50	100	150	23
North Dakota	19,613	7,000	380	260	260	92
Ohio	1,445,213	624,449	133,800	95,527	81,054	96
Oklahoma	335,111	331,330	20,790	17,421	16,869	87
Oregon	92,619	21,054	1,219	n.a.	n.a.	90
Pennsylvania	1,512,683	322,366	74,227	66,114	60,739	88
Rhode Island	150,060	5,807	2,815	3,500	2,600	96
South Carolina	23,461	2,362	430	410	516	63
South Dakota	24,412	15,905	2,002	2,800	2,800	74
Tennessee	126,966	58,410	12,040	13,585	14,535	91
Texas	935,112	925,603	75,389	75,866	75,734	79
Utah	76,469	42,000	4,800	4,800	n.a.	100
Vermont	11,944	5	n.a.	n.a.	n.a.	58
Virginia	165,744	22,574	14,496	11,278	10,309	79
Washington	57,359	7,620	1,384	1,388	96	83
West Virginia	221,900	160,232	12,338	12,012	10,527	85
Wisconsin	383,392	16,836	30,057	33,164	35,793	95
Wyoming	21,401	17,753	790	790	790	77

n.a. Not available.

Program set for A.G.A. safety conference

ACCIDENTS COST—SAFETY PAYS! This theme will dominate all four sessions of the Association's first Safety Conference at the Wardman Park Hotel in Washington, D. C., September 18 and 19. Final plans for the new conference were announced by the A. G. A. Accident Prevention Committee which met at Association headquarters as the MONTHLY went to press.

W. H. Adams, safety director, The Manufacturers Light and Heat Co., Pittsburgh, and chairman, A. G. A. Accident Prevention Committee, will serve as chairman of the conference. First address on the program will consist of a welcome to Washington by E. J. Boothby, president, Washington Gas Light Company.

Delegates will learn from D. A. Hulcy, president, Lone Star Gas Co., Dallas, Texas, and vice-president of A. G. A., what the gas industry expects of the Accident Prevention Committee. H. Carl Wolf, managing director of A. G. A., will follow up with a planned outline for the industry's defense protection.

"Grab That Gremlin" will be the title of an address by L. K. Richey, vice-president, Michigan Consolidated Gas Co., Detroit. Mr. Richey will suggest ways of locating and neutralizing the ever-lurking gremlin.

Following the morning session, a general luncheon will be held at 12:30. W. L. Connolly, chairman, Coordinating Committee, The President's Conference on Industrial Safety, U. S. Department of Labor, will speak on "Safety Is a Labor Standard."

Feature of the Monday afternoon meeting will be a five-man panel discussion of "Practical Safety During the Changeover." Howard B. Noyes, vice-president, Washington Gas Light Co., will preside as discussion leader and moderator. Experiences and problems during conversion periods will be related by the following panel members:

R. H. Coleman, safety supervisor, Consolidated Gas Electric Light & Power Co. of Baltimore, Baltimore, Md.; H. Bruce Andersen, vice-president, and H. L. Robbins, manager, customers service department, The Philadelphia Gas Works Co., Philadelphia; H. A. Eddins, vice-president, Laclede Gas Co., St. Louis, Mo., and T. C. Moran, general superintendent, Niagara Mohawk Power Corp., Syracuse, New York.

A showing of two films—"The Toughest Inch" on natural gas expansion, and "Add 'Em All Up" on fatalities in the industry—will complete the Monday program.

"Street Openings and Excavations" will be the lead-off topic on Tuesday morning. A. E. O'Connor, safety lecturer, insurance department, and P. A. Stankevich, superintendent's assistant, outside plant construction department, will explain the planned work area protection program initiated by Consolidated Edison Co. of New York, Inc.

C. H. Lewis, gas engineering department, Columbia Engineering Corp., Columbus, Ohio, will discuss "Fire Fighting—Equipment and Training." The next speaker, a representative from The Peoples Gas Light & Coke Co., Chicago, will talk on "Safe Operating and Maintenance of Automotive Fleets."

Highlights in the "Conversion of the Big Inch Lines to Natural Gas Service" will be presented by the next speaker, B. D. Goodrich, vice-president and chief engineer, Texas Eastern Transmission Corp., Shreveport, Louisiana.

Another well known figure in the gas industry, E. H. Eacker, president, Boston Consolidated Gas Co., Boston, Mass., will discuss "Safety in the Use of City Gases." His talk will cover self regulation, appliance approval, and important industry steps in utilization.

C. George Segeler, A. G. A. utilization engineer, will speak on "The Consumer Figures in Safety." The other side of the picture, "The Employee Figures in Safety," will be given by D. C. Stewart, chairman, A. G. A. Subcommittee on Accident Statistics, and safety supervisor, Niagara Hudson Power Corp., Buffalo, New York. W. H. Ligon, president, Nashville Gas & Heating Co., Nashville, Tenn., will review the conference in the light of experience.

A large attendance is expected, including representatives of National Safety Council.

Frequency group to study microwave systems

H. A. RHODES, Transcontinental Gas Pipe Line Co., was reelected chairman, National Petroleum Radio Frequency Coordinating Association at the group's annual meeting in Washington, D. C. earlier this summer. The coordinating association was created to help oil and gas pipeline companies obtain frequencies and licenses for their radio communications systems.

E. H. Wilder, Sun Pipe Line Co., was elected secretary during the meeting, and W. T. Bulla, Natural Gas Pipeline Co. of America, Chicago, was reelected vice-chairman.

The pipeline industry, and particularly long distance natural gas transmission systems, are expected to install a considerable amount of microwave equipment during the next few years. Consequently, the coordinating association has established a four-man committee to study the matter. This committee hopes to secure ideas of communications men in the industry and manufacturers so that it can offer suggestions to Federal Communications Committee prior to the time FCC makes up rules and regulations for this service.

Communications concerning the microwave study should be sent direct to Mr. Bulla in Chicago.

According to a report at the meeting, an unofficial count of Petroleum Radio Service shows approximately 300 oil, gas and pipeline users with an estimated 10,000 transmitters as of July 1, 1950. Some 4,481 of these are located in Texas and Louisiana.

Washingto

Hard-hitting
cooking demonstra
before restau
group riddles cla
of competi

Between Mrs. Flame and F. A. Kaiser are the eight features of gas-fired commercial cooking equipment proved in Washington. The demonstration refuted electric claims, adding extra point of gas superiority

gto alls gas superior—and proves it

Competitors say gas flame takes oxygen from the air. "So what!" says Mrs. Flame as she shows with dry ice how ventilating system removes products of combustion, cooking vapors and odors, keeping clean, cool air moving

Gas has speed and controllability! Whistling tea kettle over gas burner was tooting in two minutes, 31 seconds, but it was more than five minutes before a peep was heard from kettle over electric element. Pressure cooker over gas flame reached desired pressure first, kept that pressure when burner was turned to simmer. Electricity built up pressure slower, continued to build it up when turned off

When in Washington, D. C. don't say it if you can't prove it. This is good advice for politicians and businessmen alike. Earlier this year a manufacturer of electric commercial cooking equipment learned to his sorrow that he too should have followed this advice.

Last spring the manufacturing company included the nation's capitol in its itinerary for a traveling presentation on commercial cooking equipment. The presentation, it appears, was designed more to discredit gas and gas equipment than to show off the positive features of the electric appliances.

Washington Gas Light Co., also located in the capitol, is not one to go off in a corner and sulk when hit below the belt. Upon learning of the manufacturer's extravagant claims, the gas company promptly developed a scientific counter demonstration. This was presented at the June 5 meeting of Washington Restaurant Association before an attentive audience. According to Robert Wilson, executive secretary of the association, the crowd of 750 persons was the largest ever to attend a meeting sponsored by the Washington restaurant group.

In fact, the gas demonstration was so effective that it will be repeated during the 1950 American Gas Association Convention in Atlantic City next month. Under the title "Mr. Flameless and Mrs. Flame," the demonstration will be presented on the morning of October 4 at a joint meeting of the A. G. A. Residential Gas and Industrial & Commercial Gas Sections.

At its first showing in Washington, the demonstration was conducted by F. A. Kaiser, vice-president, Detroit-Michigan Stove Co., Detroit. Assisting Mr. Kaiser was Eleanor Maddox, main office receptionist, Washington Gas Light Co., who played the part of "Mrs. Flame." Each of eight points was demonstrated showing the superiority of gas for commercial cooking and at the same time debunking statements made by electric equipment manufacturer.

Highlights of this hard-hitting gas cooking show are presented in the accompanying picture story.

A few of the 750 Washington restaurateurs trying out the other fellow's food as guests of Washington Gas Light Company. Gas demonstration drew largest crowd ever to attend a Washington restaurant meeting

Test indicates that surface hardening by means of high-speed heating raises notch-fatigue strength

Surface hardening vs. fatigue in steel

By J. M. BERRY and H. J. GROVER

Battelle Memorial Institute
Columbus, Ohio

• Work described in the following article is part of an investigation sponsored at Battelle Memorial Institute by the Committee on Industrial and Commercial Gas Research, American Gas Association. Designated as Project IGR-58 under the Association's PAR Plan, the investigation is designed to extend available technical information concerning surface hardening of steels by high-speed heating methods.

a PAR activity

Service-fatigue failures in steel parts, subjected to repeated stresses, occur almost invariably at notches. The notch-fatigue strength of a steel can be increased within limitations by through-hardening. This often requires a relatively expensive alloy steel. Moreover, machining to remove scale and to compensate for possible distortion during hardening, may be costly. An alternative possibility in many applications is surface hardening the region of the notch. This minimizes or eliminates scale and distortion, often allows use of a carbon steel instead of a more expensive alloy steel and, in many instances, has additional advantages in cost and in ease of production.

At the present time, two methods of high-speed heating are particularly adaptable to a variety of surface-hardening applications. These are induction heating and high-speed gas heating. This article describes an investigation of the increase in notch-fatigue strength obtained by these methods.

The two different methods of surface heating may be expected to produce differences in details of the microstructure and hardness pattern of surface-hardened bars. Induction heating produces heat within the metal itself by induced electrical current. High frequencies tend to confine heating to layers at or near the surface, while lower frequencies tend to produce through heating.

High-speed gas heating, on the other hand, supplies heat to the metal by means of the hot combustion products impinging on the surface of the bar. The maximum temperature of these hot gases is about 3,000° F when a superheat-type burner is used.

In either method of heating, the part is quenched (usually by a water spray) and the case depth and pattern depend largely on the temperature distribution at the moment of quenching. Different thermal gradients can, thereby, give rise to different hardness gradients, even when the surface hardness is the same in both instances. For example, very thin cases may be produced by induction heating, while it is commonly agreed that case depths much less than 0.125 inch are not readily obtainable by high-speed gas heating. While it has been stated that a thin case has practical advantages, this statement does not appear to have been demonstrated in many cases. Consequently, a study of the effect of case depth upon fatigue strength has been one objective of the present investigation.

Rotating-bending fatigue tests have been made on notched bars of SAE 1045 steel. A supply of this was obtained in the form of four-inch-diameter hot-rolled bars. Tests indicated these to be of standard analysis and to have expected mechanical properties and uniform metallurgical structure. The fatigue-test specimen (shown in later photographs) had a center section 2⅛ inches in diameter notched with a ¼-inch-deep circumferential groove. Preliminary tests indicated that this notch reduced the fatigue strength of unhardened bars nearly 75 percent.*

Notched specimens were induction hardened on a 100-kw TOCCO induc-

Figure 1. Notched fatigue-test specimen of steel mounted for induction hardening, one of high-speed heating methods used in testing

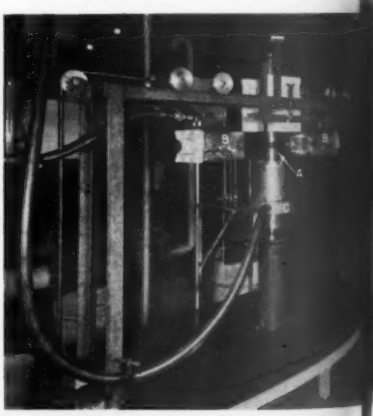


Figure 2. Ready for hardening by high-speed gas heating. Specimen (A) is mounted between two specially designed burners (B)

tion-heating machine. A single-turn split inductor block was designed and constructed at TOCCO for this purpose. Holes in the inductor block allowed water quenching almost immediately after the end of the selected heating interval. During both heating and quenching, the specimen was rotated at about 60 rpm. Figure 1 shows a specimen mounted for induction hardening.

Figure 2 shows the set-up used for hardening by high-speed gas heating. In this case, the notched specimen (A) is mounted vertically** between two specially designed burners (B). These burners were designed and constructed by engineers of Selas Corp. of America. Standard Selas equipment was used for supplying a proper gas-air mixture at suitable pressure. During heating, the burners were clamped together so that they surrounded the notched section of the specimen. After a selected heating period, releasing the clamp allowed the burners to fly apart; then the quenching ring (C) automatically moved up into position around the notch. Heating-quenching interval was less than two seconds.

Figure 3 is a photograph of the etched cross sections of surface-hardened notched specimens. These sections reveal the hardening pattern and the approximate "case depth" for the hardening conditions employed. More detailed information concerning case depth and the metallurgical nature of the hardened zone is being obtained by microhardness measurements and metallographic examination. Detailed discussion of these techniques and the results obtained thereby are beyond the scope of this paper.

Figure 4 shows the Krouse Rotating-Bending machine used for fatigue tests of the notched specimens. The caption on the figure indicates the principal features of the operation: the specimen is rotated while under a constant bending moment applied by the weight (F) through the lever (D) and the bearing (C). This machine has a load capacity of 60,000 inch-pounds bending moment, which will produce a surface stress of 100,000 psi on a 1.83-inch-diameter round bar. Speed of rotation is variable from 600 to about 2,000 rpm.

While a number of values might be quoted to *(Continued on page 26)*

* Partly due to decrease in section, partly due to stress concentration. In technical terms, the "fatigue-strength-reduction factor" was about 1.7.

** The specimen was rotated at about 12 rpm. The spindle and drive for rotation were not yet installed when the photograph was taken.

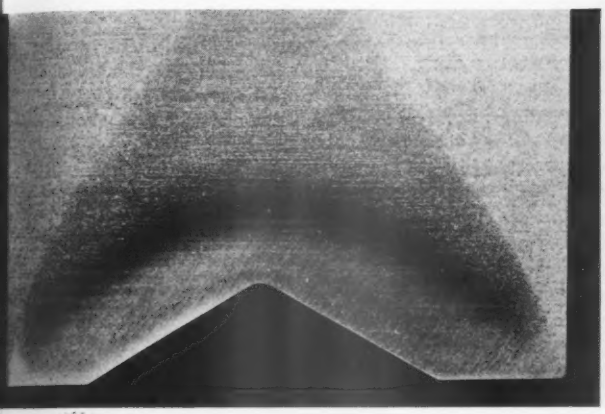


Figure 3a

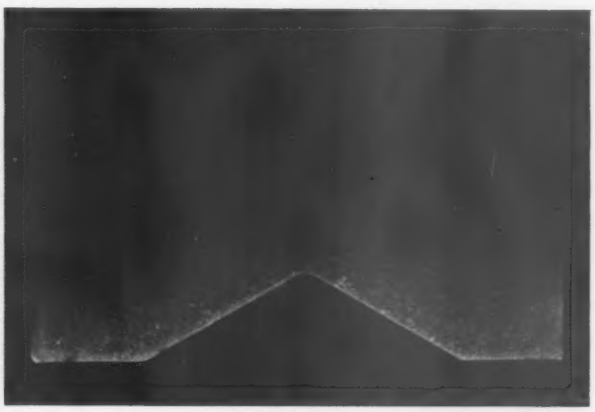
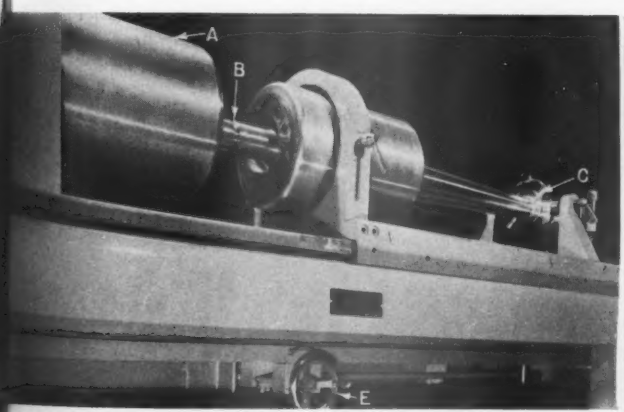


Figure 3b

▲ Figure 3. Etched cross sections of surface-hardened, notched steel specimens used in A. G. A. investigation.—(3a) induction hardened specimen; (3b) gas-hardened



▲ Figure 4. Fatigue testing machine: A-motor driving bearing; B-test specimen; C-rear loading bearing; E-load adjusting wheel; D & F (not shown) calibrated loading lever and movable load weight

▼ Figure 5. Surface hardening in the notch of left—right specimens prevented fatigue failures in the notch itself

L. R. Michelson (left) and G. B. Herr "talking shop" at Accounting Conference

Meet the bubble that didn't burst

By G. B. HERR[1] and L. R. MICHELSON[2]

Co-Chairmen, Standard Packaging Subcommittee, Materials & Supplies Committee
A. G. A. Accounting Section

For many years pipe fittings, two inches and less in diameter, have been shipped in every conceivable size and kind of container. Many of the containers although appearing to be of a weight that could be handled by one man, were actually back breakers and dangerous in handling. During the years prior to 1949 this situation became increasingly worse and brought to a head the need for improvement.

In the fall of 1946 the Materials & Supplies Committee of American Gas Association initiated a project of "Standard Packaging" of pipe fittings two inches and less in diameter. These objectives were to have fittings packaged in cartons able to withstand normal handling, not to exceed 75-100 pounds in weight, and to contain quantities of standard count.

This project has encountered rough going at times and many stumbling blocks had to be overcome. As late as the spring of 1949 there was considerable doubt as to whether it would succeed. Now just a little over a year later we can say truthfully that the rough seas have calmed. Now fittings are being standard packaged and shipped in such volume that no one needs to receive them in any other way.

This achievement has been accomplished through considerable research, questionnaires, personal contacts with manufacturers, and mainly through the fine cooperation of the fittings manufacturers. These manufacturers are to be congratulated for their whole-hearted support of this project, and the great strides they have made in such a short time, at no extra cost to the consumers.

While most manufacturers have packaged like quantities of the same items, there have been some differences. As a result of meetings of the Standard Packaging Subcommittee, definite recommendations have been made requesting American Gas Association to take action to have National Bureau of Standards issue specifications for the packaging of pipe fittings, two inches and less in diameter.

Standard quantities

Pipe nipples, another very troublesome item in inventory, was also included in our standard packaging program. However, the pipe nipple manufacturers, after we had explained the advantages that could be derived from standard packaging, formed a committee within their own organization to set up standard quantities for packages. These quantities were approved by National Bureau of Standards. The packages are most satisfactory and are highly recommended by the Standard Packaging Committee.

Pipe nipple manufacturers are to be congratulated too for the effort and progress they have made. Due to their effort, we in the gas industry should show our appreciation by ordering pipe nipples in the quantities packaged according to the Nation Bureau of Standars—Addenda S-5-54.

Brass and iron service cocks are now being packaged by several manufacturers. While this program is not as far advanced as to standard counts, suitable weights, etc., we are confident that with the fine spirit of cooperation we are receiving from many of these manufacturers, satisfactory standards will be set up in the not too distant future.

In the foregoing paragraphs we have attempted to bring readers up to date on the "Standard Packaging Program." Now we would like to point out a few results that you can achieve in ordering materials in standard packages.

A survey of several gas companies that have representatives on the Materials & Supplies Committee shows unanimity on the following results obtained by purchasing standard packages: (1) Savings in time in receiving and distribution; (2) untold savings in inventorying and spot checking; (3) conservation of space; (4) improvement in storeroom housekeeping, and (5) elimination of heavy lifting, thereby eliminating accident hazards.

Some companies are so much sold on the idea, that they have entered into a program to package all materials in their storeroom that are not received in standard packages. Tests have been made by some companies as to savings, and improvement in efficiency—results are astounding. *(Continued on page 45)*

[1] The Peoples Natural Gas Co., Pittsburgh.
[2] The Peoples Gas Light & Coke Co., Chicago.

JOHN H. W. ROPER, *CHAIRMAN* • ALAN A. CULLMAN, *VICE-CHAIRMAN*

General session luncheon and parallel meetings slated for convention

Accountants plan strong climax

Throughout the year, the Accounting Section has been in high gear under the chairmanship of John H. W. Roper, Washington Gas Light Co., Washington, D.C. Now, a strong climax is ahead in the Section's program for the October Convention.

A general Session luncheon meeting is scheduled for Tuesday, October 3, at 12:30 in the Rutland Room at Haddon Hall. On Wednesday at 9:30 AM the Section will assemble in two groups, the Customer Activities Group meeting in Room 20, and the General Activities Group in Room 21, at the Auditorium.

Programs for all three meetings should prove thought provoking and are expected to draw the attendance of accounting executives throughout the industry. In planning the program, Chairman Roper has received substantial assistance from Edward R. Eberle, Public Service Electric & Gas Co., Newark, N. J., Customer Activities coordinator; B. S. Rodey Jr., Consolidated Edison Co. of New York, Inc., General Activities coordinator, and the chairmen of the several standing committees.

Eskil I. Bjork, vice-president, The Peoples Gas Light & Coke Co., Chicago, will address the Tuesday luncheon meeting. He will spotlight that present problem of every executive—development of better employee relations.

Mr. Bjork's paper, "Wave Lengths," will treat the subject from a new angle —capturing the employee's mind and the development of better relations by getting an understanding of what he is thinking. Mr. Bjork, with wide experience in employee relations, has been obtained for the occasion through the efforts of the Accounting Employee Relations Committee under the chairmanship of W. A. Kelly, Consolidated Gas Electric Light and Power Co. of Baltimore.

On the same program, H. Frank Carey, Long Island Lighting Co., Mineola, N. Y., chairman of the Property Records Committee, will discuss current thinking in plant accounting. Original cost determinations are substantially completed in the industry and the continuing property records generally in operation. Therefore, the extended use to which such records may be put present many advantages to the industry not conceived during the pressure of establishment of the records. These advantages and other important developments in plant accounting will be covered thoroughly by Mr. Carey.

Chairman Roper will preside at the luncheon meeting and will make his summarizing report of the year's activities. L. E. Reynolds, The Connecticut Light & Power Co., chairman of the Nominating Committee, will report on nominations for the coming year. Election of officers will follow.

Program of the Wednesday meeting of the Customer Activities Group, with Coordinator Eberle presiding, will feature speakers presented by each of the standing committees composing that group. Leading off will be George E. Curtis, Boston Consolidated Gas Co., chairman of the Customer Accounting Committee. Mr. Curtis will discuss a survey by his committee covering the various ways in which utilities throughout the country utilize the spare time of direct and indirect customer contact

Three gavels and a guest: (Left to right) Section Chairman John H. W. Roper who will preside at the luncheon meeting; B. S. Rodey, Jr. and E. R. Eberle, presiding officers for two parallel sessions, and Eskil I. Bjork, luncheon speaker

clerks who are required to serve peak hours during the day but who are not required to devote their full time to customer contact work.

The Customer Collections Committee under the chairmanship of O. B. Cook, Battle Creek Gas Co., Battle Creek, Mich., will present a report on successful methods of handling delinquent accounts as a means toward development of better customer relations through personal contacts and through educating customers in the collection problem. In addition, this committee will discuss future collection problems under war conditions—problems which may be considered in the light of experience in World War II.

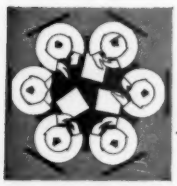
H. C. Smith, The Peoples Gas Light & Coke Co., will discuss the pros and cons of making a charge for services performed on customers' premises. He will also cover some of the accounting problems encountered in converting from manufactured to natural gas. The current importance of these problems to large segments of the industry assures wide interest in this presentation.

Coordinator Rodey will preside at the Wednesday meeting of the General Activities Group. Speakers at this Session will include Harland C. Stockwell, executive secretary, The Civic Federation of Chicago. Mr. Stockwell has been closely interested in all forms of taxation since 1933 and is a member of numerous civic groups in Chicago. He is well qualified to bring to the meeting an important message on his subject of Federal taxation.

Also at the General Activities meeting, A. B. Dilworth, vice-president and Controller, Northern Natural Gas Co., Omaha, Neb., will review current budgeting and forecasting practices. He will outline results of work on this subject by a subcommittee of which he has been chairman during the past year. Mr. Dilworth's discussion will be particularly appropriate in the light of budgetary problems which utilities have encountered during recent years of rapid expansion.

O. G. Peterson, New York State Electric and Gas Corp., Ithaca, N. Y., will represent the Materials and Supplies Committee at the General Activities Group meeting. His subject, "Materials in Motion," should prove especially interesting in view of important releases of cash made possible by reductions in inventories through rapid turnover.

Whether his interest is broad or specialized, every accountant who attends the Convention should find something on the Accounting Section's program that will help him in his particular job.



Industrial relations round-table

Prepared by
A. G. A. Personnel Committee

● **BLS issues new union directory**—The 1950 Directory of Labor Unions in the United States—a comprehensive listing of names, addresses, and telephone numbers of 209 international unions representing between 14 and 16 million workers—was issued August 1 by U.S. Department of Labor's Bureau of Labor Statistics. The directory contains a brief analysis of American trade union structure and membership.

It gives full name and address, affiliation, and names of the principal officers for each international union. In addition, information on number of locals, frequency of conventions, publications and their editors, and directors of research and education departments, is provided. The principal officers, headquarters address, and publication of 91 AFL and CIO State and Territorial organizations are also listed.

Information has been corrected to mid-1950, including affiliation changes resulting from the CIO expulsion of Communist dominated unions.

A complete finding index listing each union by its full official title facilitates use of the directory.

The "Directory of Labor Unions in the United States, 1950" (BLS Bulletin No. 980) is for sale only. It can be purchased through Superintendent of Documents, U.S. Government Printing Office, Washington 25, D.C. for 25 cents a copy.

● **What to do about charity appeals?**—The growing number of annual appeals by charity and welfare organizations is raising puzzled eyebrows among company executives. What can be done about it? Organize an additional collection campaign in the plant and office? Not such a good idea, say some executives who are concerned about the five or six different drives already being conducted each year. Say "no" to the charity asking for cooperation? That's not such a good alternative either.

A compromise solution worked out by some firms is an all-in-one, central charity fund. By means of small, voluntary weekly pay-roll deductions a sizable fund is built up, out of which individual charity appeals are answered. The pros and cons of such central funds, as well as the experiences of companies using the method, are discussed in an article entitled "All-in-one Charity Funds," in the July Management Record, National Industrial Conference Board.

● **"So—You're Going to Retire!"** is the title of an article in the July issue of *Gas News*, monthly news publication for employees of The Peoples Gas Light and Coke Co., Chicago. The article describes the pre-retirement interview program recently begun by the Employee Relations Department of Peoples Gas.

Under this plan the employee relations staff will talk to every employee over 60 years of age about all phases of retirement. Employees will be invited in for interviews in the approximate order of retirement. The program will be on a five year pre-retirement interview basis, the initial discussions with employees taking place five years before their schedule retirement age of 65.

In these interviews, it is intended that employees be advised on such matters as their prospective benefits under the pension plan; the federal system of old age benefits; their changing status under the group life and hospitalization insurance plans; their income tax status as annuitants; any benefits which may accrue to them at 65 or later as war veterans; and other pertinent matters.

For additional information regarding this program write L. A. Brandt, director of employee relations, The Peoples Gas Light and Coke Co., 122 S. Michigan Avenue, Chicago, Illinois.

● **Glossary of Currently Used Wage Terms** now available. Preparation of the Glossary was undertaken in an effort to clarify the meaning of the many wage and salary terms now employed in such areas as collective bargaining, wage administration, and statistical reporting. When writing for your copy, refer to the above title and add the following: Bulletin No. 983, Bureau of Labor Statistics, Washington, D. C. This glossary was issued in multilithed form in December 1949. The demand for copies was so great that an early printing appeared advisable. Except for minor revisions, the present edition does not differ from the original multilithed version.

● **Tobin publishes critical occupations list**—Secretary of Labor Maurice J. Tobin on August 3 made public a list of critical occupations prepared for use of the Department of Defense in expanding the Armed Forces.

(Continued on page 42)

Tuesday meetings and joint session head Industrial and Commercial gas calendar

Section primed for Convention

For the Section's Program and Papers Committee the major work of the year is completed. For the Section's membership one of the top events of the year is just ahead—the Industrial and Commercial Gas program at the American Gas Association Convention in Atlantic City. Chairman Leon Ourusoff, Washington Gas Light Co., Washington, D. C., and his group have scheduled a fast-moving afternoon session.

Opening event on the Section's Convention calendar will be a special luncheon meeting in the Rose Room of the Hotel Traymore at 12:30 PM on Tuesday, October 3. This event is expected to be of major interest to industrial and commercial gas men and executives.

Many A. G. A. member companies lend their talents to municipal authorities and local organizations to help secure the establishment of new industries in their territories. This topic will be discussed by a prominent gas man, Joseph Bowes, president, Oklahoma Natural Gas Co., Tulsa, titled "Factors Affecting the Location of Industry."

There are many unique industrial uses of natural gas in the Tulsa area, giving outside industries good reason to locate there. Mr. Bowes will discuss from first-hand experience the part his company has played in the rapid industrial expansion throughout its territory.

Two particularly pertinent topics have been selected for the Section's afternoon session on Tuesday.

In the broad field of industrial gas where the applications of gas fuel for heating operations are as numerous as there are manufactured products, the problem of dollars and cents for fuel and operating costs is very acute. The cost of processing in large volume production is often measured in mills per piece. It is a variation of this cost that determines, in many instances, the fuel to be used. The gas equipment involved must be properly selected to do the job and operated in an efficient manner to meet a particular economic situation.

Speaker on this important question, an outstanding authority, will be Frederic O. Hess, president, Selas Corp. of America, and president-elect of GAMA. Mr. Hess is widely known throughout the gas industry and throughout the industrial United States. His contributions to the gas industry in the field of industrial heating earned him the Charles A. Munroe Award in 1946, one of the highest honors in the gas industry. His subject at Atlantic City will be, "Equipment Performance and Fuel Cost in Our Economy."

On the commercial side of the gas industry picture there is a growing problem of competition in the volume cook-

Major speakers at Industrial & Commercial Gas Section's Convention session: Joseph Bowes (left) who will discuss gas company support of local industrial expansions, and F. O. Hess who will cover equipment performance and fuel cost

Industrial & Commercial Headliners at Wednesday morning joint session: Fred Kaiser (left) commercial gas speaker, and Franklin T. Rainey, industrial keynoter

ing field. In some localities this threat has not yet made itself felt. In others the threat is very real, requiring aggressive action by local gas companies if they wish to retain the profitable volume gas cooking. John J. Bourke, A. G. A. director of commercial cooking promotion, will help member companies combat this competition and tell what has been done and what will be done in the future to insure this valuable load.

Of necessity, some routine business will be conducted at the session. Far from routine, however, will be the annual report of Chairman D. W. Reeves on one of the most active years the Section has ever experienced.

A report of the Nominating Committee will present the candidates for Section officers. These nominees, as announced in the last issue of A.G.A. MONTHLY are: For chairman—Carl H. Lekberg, staff supervisor, industrial gas engineering, Northern Indiana Public Service Co., Hammond, Ind.; for vice-chairman—Ronald A. Malony, executive vice-president, The Bridgeport Gas Light Company, Bridgeport, Connecticut.

An innovation this year that should attract every gas man at Atlantic City will be the joint session of the Residential Gas Section and the Industrial and Commercial Gas Sections on Wednesday morning in the ballroom of the auditorium. For interest, entertainment and education, the demonstration by Fred Kaiser, vice-president, Detroit-Michigan Stove Co., will be tops. It will be a veritable "Medicine Show" having the cure-all for a specific gas industry ailment. "Mr. Flameless and Mrs. Flame" will be one convention highlight that will be remembered for a long time and a feature that member companies may want to repeat throughout the country.

The industrial feature at this meeting will be on the general theme of Mr. Bowes' luncheon address of the previous day. It will be a talk on the many uses of gas and its importance as an industrial fuel by Franklin T. Rainey, vice-president, East Tennessee Natural Gas Co., Knoxville, Tenn., in conjunction with a showing of the pipeline industrial gas development motion picture by Texas Gas Transmission Company.

High production theme of Metal Show

Industrial Division of A.G.A. Committee on National Displays meeting at Association headquarters to assign space for National Metal Congress and Exposition in which Industrial and Commercial Gas Section will sponsor Combined Industrial Gas Exhibit. Clockwise around table: M. A. Combs, A.G.A.; John A. Long and Richard Webber, New York; E. V. K. Schutt, Newburgh, N. Y., chairman; J. J. Condon, Chicago; W. D. Relyea, Newark, N. J.; Lewis Barry, display builder, New York

A SURVEY made by American Society for Metals from information gathered at the Cleveland Metal Show last year showed that the largest group registered in one specific show classification was composed of persons interested in "Furnaces and Heat Treating."

This reflects the view of industrial gas equipment manufacturers. It also confirms often-expressed opinion on the importance of the Combined Industrial Gas Exhibit sponsored by the Industrial and Commercial Gas Section, American Gas Association.

A. G. A. is in accord with the aims and purposes of the 1950 ASM Metal Show theme of "High Production." Cooperating exhibitors in the gas area will display equipment and processes designed to convince visitors that gas fuel and gas equipment can do the industrial heating job to meet today's needs of high production.

Many industrial gas men who are members of ASM should find it well worth-while to attend the National Metal Congress and Exposition in the International Amphitheatre, Chicago, October 23-27. Informative papers to be presented at ASM sessions and a visit to the A. G. A. Combined Exhibit will provide a wealth of information on latest techniques in the application of gas fuel for industrial heating.

Cooperating exhibitors in the A. G. A. area for 1950 are: American Gas Furnace Co., Elizabeth, N. J.; Combustion Control Corp., Cambridge, Mass.; Continental Industrial Engineers, Inc., Chicago, Ill.; Eclipse Fuel Engineering Co., Rockford, Ill.; Gas Appliance Service Inc., Chicago, Ill.; Charles A. Hones, Inc., Baldwin, N. Y.; The C. M. Kemp Manufacturing Co., Baltimore, Md.; Selas Corp. of America, Philadelphia, Pa., and The Spencer Turbine Co., Hartford.

Steel Strength

(Continued from page 21)

indicate improvement in fatigue strength from surface hardening the notch, the most striking evidence is illustrated in Figure 5. For all unhardened specimens, fatigue failure originated at the base of the notch, center in Figure 5, where the stress was highest. However, a number of specimens, surface hardened in the notch, failed with a crack starting in the large-diameter test section completely outside the notch.

The specimen on the left in Figure 5 was induction hardened; that on the right, gas hardened. Failures of this type were common with both gas and induction-hardened specimens. Thus, the surface hardening, by either induction heating or industrial gas heating, completely offset the fatigue-strength reduction due to the notch.

While a number of published articles have pointed out the possibilities of increasing fatigue strength—especially of notched parts—by various surface treatments, this does not appear to have been specifically investigated for surface hardening by industrial gas heating. In work to date on the present investigation, this method of hardening, as well as hardening by induction heating, produced very large increase in the fatigue strength of a particular notched bar. The potentialities of such treatment for practical applications definitely warrant consideration.

Industrial breakfast

INDUSTRIAL gas men, manufacturers of industrial gas equipment and editors of publications in the metal working field have been invited again this year to the Section's Industrial Gas Breakfast. The event is scheduled to be held at the Stevens Hotel in Chicago, Wednesday morning, October 25, at 8:30.

This traditional affair, a high spot of Metal Show Week, has grown more popular each year. A large turnout is expected to hear the prominent guest speaker.

Operating program completed

Subject—control: Professor Amos E. Neyhart (left) will tell Convention audience how to control accidents and vehicle costs; Baxter Wilson will discuss management attitude toward corrosion control

Program events will include talks by W. Reed Morris (left) on coke ovens in wartime, and E. C. Brenner on supplementing natural gas

Three sessions packed with discussion of timely subjects have been scheduled for the Operating Section during the Convention in Atlantic City next month. In addition, the Section has arranged for a talk "How to Be Human on the Job" during the Tuesday morning general sessions. Wallace G. Strathern, director of training, Eastern Gas and Fuel Associates, Boston, Mass., will be the general session speaker.

First of the Operating sessions will be held on Tuesday afternoon in Room B of the Atlantic City Auditorium. Six program events are planned. J. L. Coyne, Rochester Gas & Electric Corp., Rochester, N. Y., will open the proceedings with his report as chairman of the Motor Vehicle Committee. The spotlight then will turn to adequate driver training. Professor Amos E. Neyhart, Pennsylvania State College, State College, Pa., will discuss "The Relationship Between Accidents and Vehicle Costs."

Next speaker, C. S. Hazel, The Philadelphia Gas Works Co., Philadelphia, Pa., will discuss "Better Heating Service from Year-Round Pilot Operation." His company's program to encourage customers to keep their house heating pilot lights burning throughout the summer has attracted industrywide interest. Mr. Hazel will bring the delegates up-to-date on activities in this field.

Another topic of strong appeal to operating men is "Large Volume Gas Measurement." John Overbeck, Columbia Engineering Corp., Columbus, Ohio, will be the speaker.

Purging contribution to the Tuesday afternoon program will be a report on committee progress by the vice-chairman, Jesse S. Yeaw, Rochester Gas & Electric Corporation. A. B. Lauderbaugh, The Manufacturers Light and Heat Co., Pittsburgh, will bring the session to a close with a discussion of basic principles involved in galvanic corrosion.

Sidney E. Trouard, New Orleans Public Service Inc., and chairman, A. G. A. Corrosion Committee, will open the Wednesday morning session. His report will detail corrosion accomplishments and plans.

Management's attitude toward a corrosion control program usually determines the effectiveness of such an effort. The importance of wholehearted backing by management in the corrosion field will be stressed by Baxter Wilson, Mississippi Power & Light Co., Jackson, Mississippi.

Another topic of pertinent interest to many utilities is how to supplement natural gas. E. C. Brenner, Milwaukee Gas Light Co., Milwaukee, Wis., will outline his company's experience using different gases for this purpose.

Four men will collaborate in the next presentation, "Operation of Kerpely Producer with Oxygen Enriched Blast." H. R. Batchelder, R. G. Dressler and R. F. Tenney, U. S. Bureau of Mines, and R. E. Kruger, Rochester Gas and Electric Corp., will discuss progress on this A. G. A. research project. In cooperation with U. S. Bureau of Mines, tests were made at Louisiana, Mo., operating a standard Kerpely producer using various amounts of oxygen up to 98 percent in the blast.

Progress by the Association's Distribution Committee will be outlined in detail by F. J. Hall, Michigan Consolidated Gas Co., Detroit, chairman of that group. Another timely subject of wide interest has been slated for the closing spot on Wednesday afternoon. R. H. Bussard, Washington Gas Light Co., Washington, D. C., will discuss "The Effect of Conversions on Service Department Operations."

Annual Section business will head the agenda for Thursday afternoon. W. R.

Fraser, chairman, Nominating Committee, will report for that group, and the delegates will elect Section officers.

Next presentation on the program ties in closely with the present speed up in the country's preparedness program. W. Reed Morris, Koppers Co. Inc., New York, N. Y., will discuss the value of "The Coke Oven in War."

Gas production achievements during the year will be described by the committee chairman, J. P. Stephens, The Cincinnati Gas and Electric Co., Cincinnati, Ohio. The subject of plant waste disposal is becoming increasingly important to managements. An expert in this field, W. B. Hart, Atlantic Refining Co., Philadelphia, Pa., will cover "Stream Protection and Management."

The following speaker, Hall M. Henry, NEGEA Service Corp., Cambridge, Mass., is a well known figure in the Operating Section. His remarks will diagram "Oil Gas Manufacture by Two and Four-Shell Sets."

Metering, a subject basic to the gas industry, will be tackled from the economic angle by G. K. Bachmann, Public Service Electric and Gas Co., Newark, N. J. Mr. Bachmann's remarks will be followed by the report of the Chemical Committee. Progress and plans will be detailed by the chairman of this group, G. V. McGurl, Koppers Co., Inc., Pittsburgh.

Louis Shnidman, Rochester Gas and Electric Corp., will bring the Section's three-session program to a close. His talk will discuss "The Effect of the Components of Fuel Gases on Flame Characteristics and Interchangeability."

Chicago show

(Continued from page 12)

water gas sets. Other structures represent a typical by-products plant.

Model mains carry the mixed gas into a miniature metropolitan distribution system which is complete with scale-size holders of modern design. An underground network of mains, with cross-connections, enclose a model city in a large "loop." A community of scale-size residences, industrial establishments and commercial houses demonstrates the final phase of distribution within a large city.

A double row of colored translite pictures mounted above the pictorama portray many actual processes and operations of gas production and distribution, supplementing with actual photographs the processes depicted in the pictorama.

One exhibit unit demonstrates three representative uses of gas in industry. These include an actual demonstration of the heat-treating and annealing of steel with a gas flame. Another describes the roasting of coffee in a big industrial plant, and a third panel illustrates the part gas plays in making open hearth steel.

Another unit, through the use of photographs and diagrams, portrays the industry's continual research and testing programs through which the most efficient methods of gas production, utilization and service are maintained for the user's benefit.

A physicist's explanation of flame gas is given, together with a large diagram of the structure of a flame and a chart listing chemical components of flame gas.

The process by which a gas refrigerator freezes ice cubes and constantly refrigerates food is shown by means of an attractive cut-away model of a Servel refrigerator and a spectator-actuated panel using tiny animated figures of men.

The exhibit presents the last word in modern, compact kitchens. Decorated in a cheerful color scheme, the glass-enclosed model kitchen is equipped with the latest automatic gas appliances and work-saving facilities. An automatic gas range, with cut-away portions showing its workings and design, is also presented. The kitchen is built to full size and is located in a prominent position within the exhibit.

Distribution system shown

An entire unit is devoted to the distribution system of a large gas system.

It presents a detailed scale model of a tar-sealed piston type gas holder of 15 million cubic feet capacity. Wall charts sketch the hourly consumption of gas in Chicago, showing the peak send-out between 6 P.M. and 7 P.M., when 12,200,000 cubic feet of gas is used in the city. The network of gas mains of various diameters, service pipe, automatic pressure regulator stations and other facilities in the distribution system are depicted and their construction is described with models and photographs. This unit also demonstrates the equipment and automatic controls that enable the continual mixing of natural with manufactured gas in the correct proportion.

The principal by-products that are obtained from manufactured gas are listed and described in one of the exhibit's units. This complements the phases of the pictorama which present the structures and machinery which is required to produce the by-products from manufactured gas.

An artist's depiction of the history of flame gas is presented in the final unit, a large mural composed of eleven dramatic vignettes which tell the highlight events of the history of flame gas from its beginnings. This synopsis of the industry's history was painted by Herbert Field.

The first of these vignettes shows the chemical forces which nature has employed through the geological ages to create great quantities of natural gas deep within the earth. Another recounts the important contributions made by European scholars of the eighteenth and nineteenth centuries whose discoveries of how to make, store and utilize gas speeded its development as a fuel useful to the multitudes.

Other elements of the synopsis mural recount how the Chinese first used flowing natural gas to dry salt; a typical gas range of the 1870's; the natural gas fields of Texas; a shaft mine typical of those which supply the coal for the manufacture of coke oven gas; a montage showing the preparation of manufactured gas and the mixing of manufactured with natural gas; the first use of gas for street lighting in America; the first industrial use of gas in America in 1840, and a distribution system diagram for a large city.

For its centennial Peoples Gas is issuing a 32-page booklet entitled "100 Years of Gas Service in Chicago." This historical booklet sketches the development of gas service in Chicago and tells its growth from a very modest beginning in 1850 to its present far-flung development.

Waste

● Waste is worse than loss. The time is coming when every person who lays claim to ability, will keep the question of waste before him constantly. The scope of thrift is limitless.

—*Thomas A. Edison*

Dynamic Convention program to outline developments in domestic field

Section to show sales needs

Convention trio: (Left to right) Frank C. Smith, Houston, speaker on "Formula for Sales"; F. M. Foster who will present utility pointers on the gas laundry dryer, and W. Paul Jones, Evansville, Ind., who will present "Big Six" gas refrigeration awards

Well-informed management is passing along the word that whatever international situation develops hard-hitting sales forces will be required to keep homemakers sold on the merits and advantages of modern gas service.

Gas industry sales executives will be brought up-to-date on late developments and plans in the domestic field at the American Gas Association Convention in Atlantic City. Three major contributions are scheduled for the Residential Gas Section. First of these events will be an afternoon meeting on Tuesday, October 3, built around four feature presentations. On Wednesday morning, October 4, the Residential Section will hold a joint meeting with Industrial and Commercial gas men. Climaxing the domestic side of the Convention will be a special Dealer Day on Thursday with Residential Section one of three sponsors.

At the Thursday morning general session, the Residential Section will be represented by W. L. Hayes, general sales manager, Montana-Dakota Utilities Co., Minneapolis, Minnesota. His title will be "Keeping the Public Sold on Gas—An Industry Responsibility."

H. P. Morehouse, Public Service Electric and Gas Co., Newark, N. J., and chairman, A. G. A. Residential Gas Section, will preside at the Tuesday afternoon session. His opening remarks will single out important accomplishments of the past year.

Sales formula

Following election of Section officers, the conferees will hear a three-way discussion entitled "Formula for Sales." Lead-off speaker on this subject will be the chairman of the Association's General Promotional Planning Committee, Frank C. Smith, president, Houston Natural Gas Corp., Houston, Texas. Drawing on a wealth of local and national promotional experience, Mr. Smith will review the accomplishments of the Par Program as it affects advertising, promotion and sales.

Completing "Formula for Sales" will be a dramatic presentation by H. Vinton Potter and C. E. Hall, coordinator and assistant coordinator, respectively, of A. G. A. promotion. This event is expected to diagram what's ahead in sales for 1951.

Next feature attraction on the program will be presentation of awards to national winners in the "Big Six" Gas Refrigeration Contest sponsored by A. G. A. and Servel, Inc. W. Paul Jones, president of Servel, will present the awards in a presentation entitled "Spotlight on Sales."

One of the industry's most promising new load builders, the gas laundry dryer, will be starred in the next attraction. The title "Opportunity Unlimited" has been selected for this three-part sales discussion.

C. H. Rippe, sales manager, home appliance division, Hamilton Manufacturing Co., Two Rivers, Wis., will present the manufacturers' story. He will cover market potentials of the gas laundry dryer, value of the load and the ways of selling this modern appliance.

The utility viewpoint will be outlined by F. M. Foster, manager of general sales, Southern California Gas Co., Los Angeles, California. Mr. Foster will throw new light on the importance of the gas laundry dryer load, and relate what West Coast companies are doing to promote the dryer. He is also expected to list suggestions for



Opportunities in the domestic field: (Left to right) C. H. Rippe, Two Rivers, Wis., and Irene Muntz, Rochester, N. Y., who will discuss gas laundry dryer from the manufacturer and home service angles, and Fen K. Doscher, authority from New York who will discuss "Dynamics of Sales Leadership"

future development of the load.

Irene Muntz, home service director, Rochester Gas & Electric Corp., Rochester, N. Y., will complete the discussion by telling what home service departments have done and are planning to do to push the gas laundry dryer. Miss Muntz is well qualified to tackle this subject as she is currently serving as chairman, A. G. A. Home Service Committee.

An unusual inspirational feature has been saved for the final event on the Section's Tuesday program. Fen K. Doscher, vice-president, Lily Tulip Cup Corp., New York, N. Y., will fire at his audience some dramatic "cuff-notes" on the "Dynamics of Sales Leadership." Mr. Doscher is currently serving as president of New York Sales Executives Club and a director of National Sales Executives, Inc.

Accustomed to meeting problems by frontal attack, Mr. Doscher will explain the importance of dynamic salesmanship to business.

The Section will make two major contributions to the joint Residential-Industrial & Commercial session on Wednesday morning. Chairman Morehouse will be one of the two presiding officers in the Auditorium ballroom.

Conferees at this meeting will hear first about "The Thirteenth Doughnut," an extra something required in modern salesmanship. The speaker, G. A. Saas, G. A. Saas & Co., Indianapolis, Ind., is an authority on advertising, sales promotion and human relations. He has spent 18 years in the newspaper business and is a former director of advertising and public relations for Citizens Gas and Coke Utility in Indianapolis.

Dramatic and real-life illustrations will be packed into the second Residential talk on Wednesday morning. The speaker, Dr. J. L. Rosenstein, Loyola University, Chicago, is currently director and chief of staff, The Career Planning Council of America. During World War II he was head of the Incentives Plans Unit of the National War Labor Board in Chicago and administrative officer for that board. Later he served as arbiter in labor-management disputes. His talk, "If Salesmen Could Choose Their Sales Managers," will be a thought-provoking climax for the sales leaders.



Program notes on other Residential activities at the A.G.A. Convention: Dr. J. L. Rosenstein (left), Chicago, and G. A. Saas (center), Indianapolis, will represent the Section at Wednesday joint session; Dean A. Strickland, Houston, will discuss "Cash on the Barrelhead" on Dealer Day program

Dealer Day to draw large crowd

Dealer chairman and keynoter: Herb Names (left), Denver, Colo., will preside at special Dealer Day program in Atlantic City; D. A. Hulcy (right), vice-president of A.G.A., will present featured address "Operation Teamwork"

Widespread support is indicated for the special Dealer Day program which will be featured on October 5 during the 1950 Annual Convention of American Gas Association in Atlantic City. A record number of dealers are expected to attend the afternoon session on Thursday under the sponsorship of American Gas Association, Gas Appliance Manufacturers Association and National Appliance and Radio Dealers Association.

One of the country's leading appliance dealers, Herb Names from the firm of the same name in Denver, Colo., will serve as chairman of the meeting. Numerous utility organizations are supporting the Dealer Day. One utility, The Brooklyn Union Gas Co., expects to send eight bus loads of their dealers to Atlantic City to view the giant Exhibition of Gas Appliances and Equipment. Throughout the country, utilities have mailed more than 11,000 invitations to dealers to attend this largest and most elaborate gas appliance show.

Joint promotion

Gas Appliance Manufacturers have joined enthusiastically in promoting and planning the Dealer Day program. They have invited 24,000 of their dealers. Liquefied Petroleum Gas Association is also sending out 1,000 invitations to their membership. In addition, the northeastern and southeastern sections of LPGA are calling a meeting in Atlantic City for Thursday, October 5, so that they may be on hand for the Dealer Day activities. National Appliance and Radio Dealers Association are also supporting the program through their dealer members.

Keynote speaker for the Thursday afternoon dealer meeting will be D. A. Hulcy, president, Lone Star Gas Co., Dallas, Texas, and vice-president of A. G. A. Under the title "Operation Teamwork" Mr. Hulcy will tell the dealers what the gas industry and American Gas Association are doing cooperatively in the fields of research, promotion and advertising to keep the consumer sold on sales of modern gas appliances and service.

Three progressive merchants who have done outstanding jobs in selling gas appliances will conduct a dealer panel entitled "The Sale's the Thing." Different forms of sales promotion will be represented on the panel. Participants include Harry B. Price, Jr., Price's Incorporated, Norfolk, Va.; Herb Names, Denver, Colo., and Harold L. Frankel, Frankel Appliances Inc., Huntington, West Virginia.

Profit opportunities for the dealer in selling the gas refrigerator will be discussed in detail by the next speaker, John K. Knighton, general sales manager, Servel, Inc., Evansville, Indiana. An experienced hand in the selling game, Mr. Knighton will discuss how to "Profit—By the Wants of Others." He will also present the dealer distributor awards in the Big Six Gas Refrigerator Campaign.

An intriguing title, "Cash on the Barrelhead," has been selected by Dean A. Strickland, general sales manager, United Gas Corp., Houston, Texas. Noting that gas appliance dealers are in business to make money, Mr. Strickland will dramatize the salient fact that dealers can make more profit on gas ranges than on any other appliance.

Crown the king

The Water Heating Division of GAMA has selected the dealer meeting as the ideal location for crowning the industry's "King of the Court of Flame." In an impressive ceremony, the dealer or dealer's salesman who has made the best sales record in the nationwide Court of Flame campaign for selling automatic gas water heaters will receive the Campaign Crown. In addition to the crown and a substantial cash award, the winner will receive a free trip, with all expenses paid, to the Convention and Exhibition. R. Louis Towne, sales promotion manager, Rheem Manufacturing Co., and chairman, Sales Promotion Committee, will preside at the ceremony.

"What Are You Going Home With?" will be asked by the meeting chairman, Mr. Names. His summary of the various points expounded on the program will help the dealers to return home with valuable sales pointers.

Special recreation features are being arranged for the dealer delegations. Door prizes worth $1,000 will be provided. In addition, gas appliance manufacturers will be asked to arrange special showings, if necessary, so that all visiting dealers will be able to view the greatest display of modern gas appliances ever staged under one roof.

Industry news

A.G.A. completes plans for range ignition tests

a PAR activity

A SPECIAL SERIES of nationwide field tests will be started October 1 to help accelerate development of automatic ignition devices for automatic gas ranges. Some 49 utility companies, 16 gas range manufacturers and six control manufacturers, will participate in the project under the PAR program.

Close cooperation between utilities, manufacturers and A. G. A. in the test program is expected to result in a marked advance toward development of a gas range which will consume little or no energy when not in use. Eleven different types of automatic range ignition systems, seven electric and four single-point, will be thoroughly tested under actual operating conditions. A total of 200 automatic gas ranges will be equipped with each type of ignition or a grand total of 2,200 ranges.

According to H. H. Cuthrell, president, A. G. A., and chairman of the Special Committee on Automatic Range Ignition Development which is supervising the project, the tests will be conducted for a minimum period of six months. The various range ignition systems will be operated under normal home conditions. Cooperating utilities will complete monthly special report forms which will be forwarded to A. G. A. Laboratories for processing and analysis. R. J. Rutherford, president, Worcester Gas Light Co., Worcester, Mass., is chairman of the Working Committee which will supervise details of the field tests.

Gas ranges used in the study will be purchased by the 49 participating utilities and later disposed as these companies see fit.

The project will climax several years of industry research on single-point ignition and is expected to be the most extensive field study of gas appliances ever undertaken. Participating utilities and manufacturers should find the tests an invaluable opportunity to obtain operating data under selected field conditions.

The following companies will participate in the automatic range ignition field tests:

Utility companies—Alabama Gas Corp., Birmingham, Ala.; Arkansas Western Gas Co., Fayetteville, Ark.; Atlanta Gas Light Co., Atlanta, Ga.; Boston Consolidated Gas Co., Jamaica Plain, Mass.; The Bridgeport Gas Light Co., Bridgeport, Conn.; The Brooklyn Union Gas Co., Brooklyn, N. Y.; Cambridge Gas Light Co., Cambridge, Mass.; Central Illinois Electric & Gas Co., Rockford, Ill.; Central Illinois Light Co., Peoria, Ill.; Citizens Gas & Coke Utility, Indianapolis, Ind.; Consolidated Gas Electric Light & Power Co. of Baltimore, Baltimore, Md.; The East Ohio Gas Co., Cleveland, Ohio; Elizabethtown Consolidated Gas Co., Elizabeth, N. J.; Equitable Gas Co., Pittsburgh, Pa.; The Gas Service Co., Kansas City, Mo.; The Hartford Gas Co., Hartford, Conn.; Houston Natural Gas Corp., Houston, Texas; Indiana Gas & Water Co., Inc., Indianapolis, Ind.; Iowa-Illinois Gas and Electric Co., Davenport, Iowa; Laclede Gas Co., St. Louis, Mo.; Lone Star Gas Co., Dallas, Texas; Long Island Lighting Co., Mineola, N. Y.; The Manufactureres Light and Heat Co., Pittsburgh, Pa.; Metropolitan Utilities District of Omaha, Omaha, Neb.; Michigan Consolidated Gas Co., Detroit, Mich.; Milwaukee Gas Light Co., Milwaukee, Wis.; Minneapolis Gas Co., Minneapolis, Minn.; Montana-Dakota Utilities Co., Minneapolis, Minn.; Mountain Fuel Supply Co., Salt Lake City, Utah; Nashville Gas & Heating Co., Nashville, Tenn.; North Shore Gas Co., Waukegan, Ill.; Northern Indiana Public Service Co., Hammond, Ind.; The Ohio Fuel Gas Co., Columbus, Ohio; Oklahoma Natural Gas Co., Tulsa, Okla.; Pacific Gas & Electric Co., San Francisco, Calif.; The Peoples Gas Light & Coke Co., Chicago, Ill.; The Philadelphia Gas Works Co., Philadelphia, Pa.; Portland Gas & Coke Co., Portland, Ore.; Providence Gas Co., Providence, R. I.; Public Service Electric & Gas Co., Newark, N. J.; Public Service Co. of Colorado, Denver, Colo.; Rochester Gas & Electric Corp., Rochester, N. Y.; Seattle Gas Co., Seattle, Wash.; Southern California Gas Co., Los Angeles, Calif.; Southern Counties Gas Co. of California, Los Angeles, Calif.; Springfield Gas Light Co., Springfield, Mass.; United Gas Corp., Houston, Texas; Washington Gas Light Co., Washington, D. C.; Worcester Gas Light Co., Worcester.

Range manufacturers—American Stove Co., St. Louis, Mo.; Caloric Stove Corp., Philadelphia, Pa.; Detroit-Michigan Stove Co., Detroit, Mich.; Graham Manufacturing Co., Newark, Calif.; Globe American Corp., Kokomo, Ind.; Grand Industries, Inc., Cleveland, Ohio; Hardwick Stove Co., Cleveland, Tenn.; Malleable Iron Range Co., Beaver Dam, Wisc.; O'Keefe & Merritt Co., Los Angeles, Calif.; Odin Manufacturing Co., Erie, Pa.; Utility Appliance Corp., Los Angeles, Calif.; Western Stove Co., Culver City, Calif.; Geo. D. Roper Corp., Rockford, Ill.; Estate Stove Co., Hamilton, Ohio; The Tappan Stove Co., Mansfield, Ohio; Cribben & Sexton Co., Chicago, Illinois.

Control manufacturers—Penn Electric Switch Co., Goshen, Ind.; Perfex Corp., Milwaukee, Wis.; The Tappan Stove Co., Mansfield, Ohio; The Patrol Valve Co., Cleveland, Ohio; Bryant Heater Co., Cleveland, Ohio; Robertshaw-Fulton Controls Co., Youngwood.

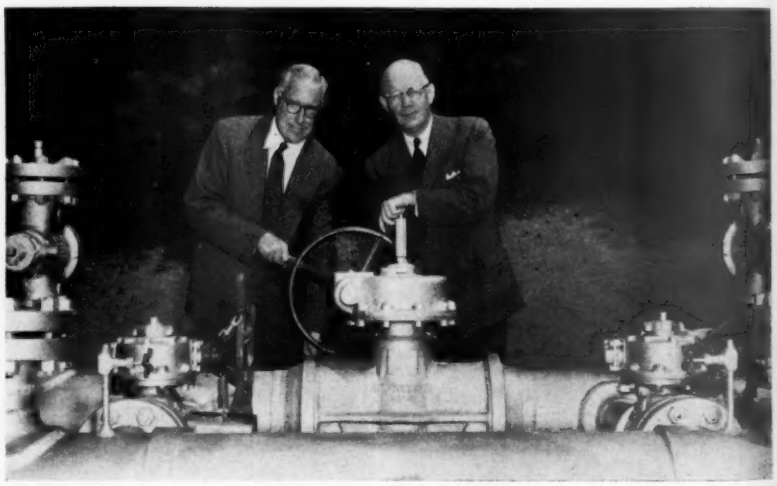
Texas natural gas reaches Mid-Hudson Valley

NATURAL GAS from Texas flowed into the lines of Central Hudson Gas & Electric Corp., Poughkeepsie, N. Y., for the first time on July 31. Ernest R. Acker, company president, turned a valve to complete connection of the company line with the long-distance pipeline.

The ceremony took place at a new metering and regulating station north of Newburgh. Participating were officials of Central Hudson, Columbia Gas System and builders of the 40-mile, ten-inch natural gas pipeline.

The entire construction project, including pipeline connections and necessary regulating stations, has cost approximately $2 million. An additional $660,000 is being spent by the company for conversion of customer appliances for natural gas use. The project was begun in early February 1950. Most critical construction operation was the underwater crossing at Poughkeepsie, the first natural gas pipeline beneath the Hudson River.

President Acker noted that for Central Hudson's gas department, natural gas will bring to an end a long period of loss or marginal operation and will make possible a fair, reasonable return.



First natural gas for Mid-Hudson Valley, New York State, being turned on by Ernest R. Acker (left), president, Central Hudson Gas & Electric Corp., and George S. Young, executive vice-president, The Columbia Gas System, Inc., supplier of Texas gas to the new line, first to cross the Hudson River

New domestic gas research publications

a PAR activity

THREE new research publications have been released under sponsorship of the Association's Committee on Domestic Gas Research. R. J. Rutherford, president, Worcester Gas Light Co., Worcester, Mass., is committee-chairman.

● **"Galvanic Corrosion of Dissimilar Metals as Applied to Gas Water Heater Storage Tanks"** (Project DGR-3-WH)—Final data, summary and conclusions are now available in Part III of the report, published last month. Work on the study has been completed by Dr. Robert C. Weast, Case Institute of Technology.

The data should be of great help to all gas water heater manufacturers in designing heaters for longer tank life; to gas companies and service organizations in handling any complaints regarding tank renewals, and to manufacturer technicians in developing extension tests for different waters that their heaters are called upon to use. *(Price, 50 cents.)*

● **Research Bulletin 55—"Investigation of Primary Air Injection by Use of Variable Chamber Pressures"** (Project DGR-2-B)—Although the information presented is primarily of value to persons entrusted with the design of burners and appliances, it should also provide sales and service personnel with a better understanding of primary air injection. *(Price, $1.00.)*

● **Research Report 1151-A—"A Study and Observation of the Effectiveness of Temperature and Pressure Relief Devices and Emergency Gas Shut-Offs for Gas Water Heaters"** (Project DGR-5-WH)—This covers a paper study of the subject supported by a limited number of laboratory tests. *(Price, $1.50.)*

Utility advertising

TOTAL ADVERTISING expenditures of 147 public utility companies reporting on contemplated changes for 1950 will average about 5.6 percent above 1949. This conclusion is obtained from a recently completed survey by Public Utilities Advertising Association. According to the report, average advertising expenditures per customer for all utilities were 65 cents in 1949 against 62 cents in 1948.

Other highlights of the report are based on replies from 163 gas and electric utilities representing about 62 percent of all gas users and 49 percent of all electric users in the U. S. Gas utilities devoted more of their gross revenue to advertising in 1949 than electric or combination companies, the report announces. Newspaper space used by utilities last year showed a substantial increase but there was no appreciable rise in the use of television for advertising.

Heat-power symbols

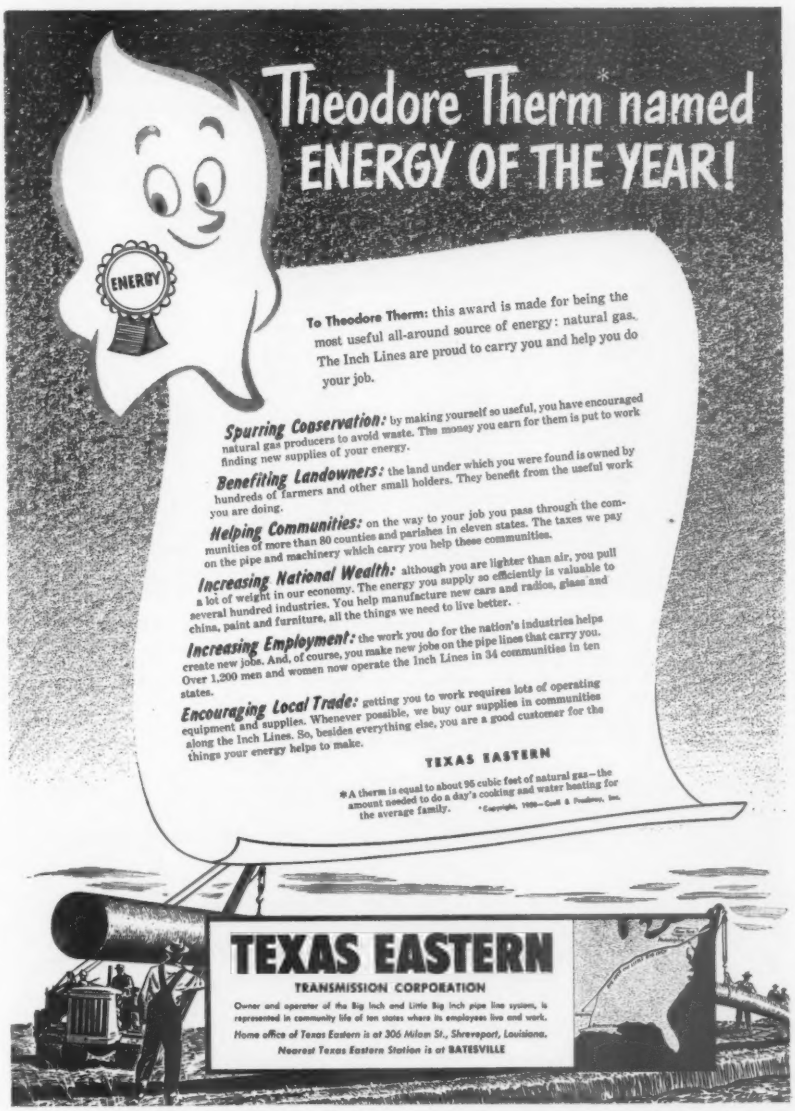
OF PARTICULAR INTEREST to persons preparing drawings showing heat-power and boiler plant apparatus is "Graphical Symbols for Heat-Power Apparatus" (ASA Z32.2.6-1950) approved by American Standards Association.

These standards were prepared through the cooperative efforts of various organizations, including American Gas Association. They are now available from American Society of Mechanical Engineers, 29 West 39 St., New York 18, N. Y., at 35 cents a copy.

Automotive firm purchased

McCABE-POWERS AUTO BODY CO., St. Louis, Mo., has purchased American Coach & Body Co., Cleveland, Ohio, one of the country's principal manufacturers of automotive equipment for public utilities. The announcement was made jointly by John J. Powers, vice-president, McCabe-Powers, and Robert W. Hadley, president, American Coach & Body, following a recent meeting of the Cleveland firm's board of directors. The sale is subject to ratification by American Coach & Body's stockholders. The products of both companies will continue to be manufactured in both companies' plants. The Public Utility Division of McCabe-Powers, with this acquisition of American Coach & Body, will be known as the "Powers-American" Division of the firm.

"Theodore Therm" meets the public



Meet "Theodore Therm," copyrighted symbol of modern gas service. His advertising messages help explain to the public the part Texas Eastern plays in community activities and welfare and also in the national economy. Later this year he will show how many products gas contributes to in peace and war

A.G.A. exhibit popular with educators

Visitors checking material in A. G. A. exhibit during American Home Economics Association Convention: Home service attendant wearing plastic apron is Margaret McPherson, Boston Consolidated Gas Co.

Boston views latest in gas kitchens

New Freedom Gas Kitchen display, a new small apartment type, at American Home Economics Convention and Exhibit: Robert A. MacNeille (left), president, St. Charles Manufacturing Co.; Sue Egan, public relations director for the firm; Evelyn Kirkpatrick, director of kitchen planning, Boston Consolidated Gas Co.; Norval D. Jennings, secretary, A. G. A. New Freedom Gas Kitchen Progam—A PAR Activity

Publicity group maps programs

A. G. A. Publicity and Advertising Committee in Spring Lake, N. J.: (Left to right around table) James M. Floyd, Dallas; C. J. Allen, Waterbury, Conn.; Howard A. Praeger, Brooklyn; Harold E. Eckes, Cleveland; George A. McDonald, A. G. A.; R. G. Barnett, Portland, Ore., chairman; Jessie Hughes, A. G. A.; J. A. Gallagher, Newark, N. J.; Newell E. Loomis, Detroit; Jean Clarke Thompson, A. G. A.; Don P. Schively, Hartford, Conn.; (standing) Daniel H. Mawat, Chicago; Arthur P. Kelly, Rochester; A. Q. Smith, A. G. A.

a PAR activity

THRONGS of educators and other visitors flocked to view American Gas Association's educational exhibit at the annual convention of American Home Economics Association in Boston during July. In fact, the total of 2,600 visitors set a new record for this A. G. A. activity.

A display of Home Economics Career Records in the exhibit drew numerous favorable comments. Many of the educators reported that they are using these records in local areas on loan from gas companies which have purchased sets from A. G. A. A constant flow of visitors registered to receive, during the school year, various A. G. A. educational booklets and scheduled films for class work.

One feature of the A. G. A. exhibit which drew unusual attention was a set of baking utensils constructed to American Standard dimensions. An accompanying placard announced "Home Service Uses These Correct Pan Sizes in Gas Range Demonstrations."

The booth was staffed throughout the convention by home service directors who donated their services for at least one session of the five-day meeting.

Campbell honored

THE CONNECTICUT LIGHT AND POWER CO., and Charles L. Campbell, the company's board chairman, were honored August 11 at a luncheon meeting sponsored by The Newcomen Society for North America at Skipper's Dock in Noank, Connecticut.

Mr. Campbell, who addressed the group on the 33-year history of his company, is vice-chairman, Connecticut committee of The Newcomen Society of England. He was introduced by Robert H. Knowlton, president of the utility company and also a member of the Connecticut committee.

The Newcomen Society, whose North American membership includes more than 10,000 American business leaders, has headquarters in London, England. General purpose of the organization is to make permanent record of the many factors which have contributed, or are still contributing to progress of mankind.

Lesson in public relations

AN OBJECT LESSON on how to build good public relations for utilities was provided recently by personnel of Jersey Central Power & Light Co., Asbury Park, New Jersey.

S. A. LaFaso, director of public relations for the company, proved the effectiveness of the direct approach during the munitions explosion which rocked South Amboy, N. J., earlier this year. His on-the-spot assistance to public news sources immediately following the disaster were so dramatic and so unusual that they were reported at length by The Public Utilities Advertising Association.

The PUAA Bulletin describes the action as follows:

"To help reporters reach a vantage point for pictures and stories, and to help them reach their news rooms, LaFaso and his as-

sociates set up special facilities at the South Amboy power station from the shattered window openings of which a full view of the disaster area was provided. Telephones and typewriters were at hand. Sam, who had a special pass admitting him to the danger zone, drove his car through police and military lines to pick up reporters, radio, newsreel and television men and take them to the South Amboy plant 'ringside.'

"JCP&L's public relations department worked closely with newsmen throughout, giving them as much information as possible and helping them with pictures. Out-of-town papers were contacted by phone and the events of the explosion as they affected the company's plant and service were described in detail.

"JCP&L lost nothing through this close contact with the newspapers and radio, those who followed the situation report. Stories appearing later reflected the warm appreciation of the press.

"JCP&L also bagged a number of good editorials based on uninterrupted service under extreme conditions, but inspired no doubt in part by the excellent arrangements for news coverage set up by LaFaso and his department."

Details of the New Jersey utility's straightforward approach to public relations were outlined in the March 1950 issue of the A. G. A. MONTHLY under the title "No substitute for good public relations."

A.G.A. publishes 1949 Gas Facts edition

AN IMPRESSIVE ARRAY of information on operating and financial developments in the gas utility industry is presented in the newly published, 1949 edition of *Gas Facts*. Extra copies of the publication, prepared by the Bureau of Statistics, American Gas Association, are now available.

As in past years the volume includes data relating to natural gas reserves, production of the several types of gas, customer, sales and revenue trends. Also included is information relating to security issues, construction expenditures, composite balance sheets and income accounts for straight and combination gas utilities, miles of main, and labor.

One of the major improvements in this year's edition is broader data relating to security issues for the entire period since 1937. In previous years such statistics related only to those issues reported by Securities and Exchange Commission for companies subject to its jurisdiction under the Holding Company Act. This year, however, these statistics include all gas utility security issues for which records could be found, whether or not subject to the Commission. The information is now truly representative of total gas utility financing during the period 1937-1949, inclusive.

During the last year the Association sponsored jointly with American Petroleum Institute and Bituminous Coal Institute a special tabulation of fuels and electric energy consumption by industrial establishments as gathered by U. S. Bureau of the Census in its 1947 Census of Manufactures. This survey presents the quantity and cost of principal fuels used, separately by industry groups, in each of the 48 states. Several summary tables from the report have been prepared and are included in this year's edition of *Gas Facts*.

A limited number of copies of the original survey by the Bureau of the Census are available to member companies from the A. G. A. Bureau of Statistics. Despite certain limitations and different statistical treatment of industrial sales from that reported elsewhere in *Gas Facts*, the study should prove valuable in analyzing industrial fuel markets.*

For several years the A. G. A. Bureau of statistics has been obtaining detailed operating expense information from gas companies on its regular annual questionnaire. This information now has been summarized and developed for publication in the form of salient operating expense ratios. These indicate such items as production cost per Mcf., sales promotion cost per customer, total operating expense per Mcf., and other similar items. This material is shown in nine new tables covering the years 1947-1949, segregated by type of gas company.

This added material should enhance still further the usefulness of *Gas Facts*. As in past years copies may be obtained from Bureau of Statistics, American Gas Association, 420 Lexington Ave., New York 17, N. Y., at a price of $1.00 per copy.

* The Census Bureau reported as "mixed" gas all consumption by plants using more than one type of gas, thereby greatly overstating the actual consumption of such gas as generally understood. Gas purchased from non-utility suppliers is included. While appropriate for the purpose of the census, this approach invalidates comparisons with utility sales to industrial customers reported elsewhere in *Gas Facts*. In some instances gas sales or transfers by one branch of an industrial establishment to another branch (particularly within petroleum refineries and steel mills) have been included while realistic cost credits for gas have frequently not been reported, thus invalidating unit prices.

Josephine Greenwood heads utility librarians

JOSEPHINE I. GREENWOOD, librarian, Consolidated Edison Co. of New York, Inc., was elected chairman, Public Utilities Section, Special Libraries Association, at the group's annual convention in Atlantic City, N. J., June 12-16, 1950. Other new officers are: vice-chairman—Anna Irene Marten, librarian, Union Electric Co. of Missouri, St. Louis, Mo., and secretary—Richard D. Green, librarian, National Association of Electric Companies.

Special Libraries Association is an international organization including more than 5,000 librarians of business, professional, governmental and industrial organizations. Its objectives are to promote the collection, organization and dissemination of information in specialized fields and to improve usefulness of special libraries and information services.

The Public Utilities Section provides a meeting ground for discussion of common interests and the solution of common problems. Members from public utility libraries and information centers use the section's meetings to help maintain a high standard of service to their various clientele.

An exhibit committee of this section, headed by Mary E. Agee, librarian, American Gas Association, as chairman, is preparing a library booth for display at the 1950 A. G. A. Convention in Atlantic City. Set up as a model gas company library, the exhibit will demonstrate the various services a modern library can render to member companies. It also will show member utilities how to maintain most economically and efficiently a central information center, administered by a trained specialist, for the use of all company departments.

Eight other librarians from the industry are serving as members of the exhibit committee. They are: Cleora Caton, San Diego Gas & Electric Co., San Diego, Calif.; Anita Glienke, Milwaukee Gas Light Co., Milwaukee, Wis.; Josephine I. Greenwood, Consolidated Edison Co. of New York, Inc.; Louis L. McTague, The United Gas Improvement Co., Philadelphia, Pa.; Anna Irene Marten, Union Electric Co. of Missouri, St. Louis, Mo.; Alma C. Mitchill, Public Service Corp. of New Jersey, Newark, N. J.; Clara Ray, Virginia Electric and Power Co., Richmond, Va.; William J. Soika, The Peoples Gas Light and Coke Co., Chicago, Illinois.

Miss Mitchill served as chairman of the libraries association's convention. Florence E. Carlton, assistant librarian, Public Service Electric and Gas Co., Newark, N. J., was convention treasurer. Miss Greenwood presided during the convention at a special breakfast of the Public Utilities Section.

Among the convention addresses were talks by Edward C. Rose, vice-president, Public Service Electric and Gas Co., chief speaker at the annual banquet, and Howard Coonley, American Standards Association, at one of the luncheon meetings.

Wisconsin customers told natural gas facts

ANSWERS to 22 important questions about natural gas are featured in a new consumer booklet published by Wisconsin Public Service Corp., Green Bay, Wisconsin.

Prior to the arrival of natural gas service this summer, every customer on the company's lines received a copy of "Natural Gas and What It Means to You." Simple, direct copy and illustrations explain what natural gas will do for the customer, how natural gas is different, where it comes from, how appliances will be converted.

Why is natural gas an ideal fuel? The booklet answers that question as follows: "There are so many reasons, but a few of the more important ones are its low cost, purity, uniformity, cleanliness, reliability and complete convenience. . . ."

Gas water heating soars in Philadelphia

THE BIGGEST YEAR in the history of the gas water heating business in Philadelphia has been forecast by The Philadelphia Gas Works Company. Spokesmen for the company revealed recently that records of sales for the first half of the year indicated a 1950 total of more than 50,000 additional sales of automatic gas water heaters.

This all-time high mark is being established by retail dealers and plumbers throughout the city. As a result of their successful selling activity, shipments of automatic gas water heaters by manufacturers are smashing records.

Three big factors that have contributed heavily toward these accomplishments: (1) The "Thrifty for '50" Purchase Plan of No Money Down, 3 Years to Pay; (2) full cooperation by manufacturers, wholesale jobbers, and their local selling agents, in the campaign; (3) a coordinated program of advertising and sales in which all parties pooled their efforts.

Gas refrigeration contest winners named

COVETED "Jet Freeze" bronze trophy plaques and substantial cash prizes have been awarded to company and individual winners for the first half of the Big Six Gas Refrigeration Sales Contest. The competition was sponsored by Gas Refrigeration Committee of the Residential Gas Section, American Gas Association. Servel, Inc., Evansville, Ind., was donor of the awards for the most retail installations per 1,000 meters for gas companies, distributors, distributor salesmen, dealers, retail salesmen and department salesmen in each of six geographical regions.

Prizes just awarded covered the months of April, May and June. Six additional "Clean Sweep" bronze trophy plaques, one for each region, as well as additional cash awards, will be given during the Clean Sweep Contest, July 1 to September 10. An "American Way" trophy statue and an expense-paid vacation flight will be awarded to the gas company in each region that makes the most retail installations per 1,000 meters during the entire period of the Big Six campaign.

Newport (R.I.) Gas Company was winner in the Region A contest (covering nine states) for the first quarter. The Manufacturers Light and Heat Co., Waynesboro, Pa., was winner in the 11-state Region B, while Mississippi Gas Co., Meridian, Miss., won the nine-state Region C contest.

In the nine states comprising Region D, Central Illinois Light Co., Springfield, Ill., was named the winner. Southern Union Gas Company entered two branches and won prizes in both regions. The Galveston, Texas, branch of Southern Union won the Region E contest covering six states, while top honors in the 12-state Region F went to Southern Union Gas Company in Carlsbad, New Mexico.

R. C. Barreca, Boston Consolidated Gas Co., won the top award of $150 in cash, for the retail salesman making most sales in Region A. Other leading retail salesmen in Region A, and their awards were as follows: A. P. Gillis, Boston Consolidated, second prize, $125 and Harry A. Alward, also Boston Consolidated, third prize of $100. Cash awards also were made to Angela Papa, James F. Quigley, Harry Sibree, Edward Radgowski, Richard J. Hughes, Joseph R. Burns, and Harry Poh, all of The Brooklyn Union Gas Co.; Henry DeAngelis, Boston Consolidated Gas Co., and William J. Collins, Iriquois Gas Corp., Buffalo, N. Y.

Jack Fisher, Jack Fisher, Inc., Charleston, W. Va., won the $150 prize in Region B. Chuck McKenzie, Star Furniture Mart, Huntington, W. Va., took $125 as second prize and C. F. Starkey, Jr., C. & G. Appliance Co., Parkersburg, W. Va., won $100 as third prize. Other award winners included Forrest W. Eckert, T. K. White, Carryl H. Pugh, Kenneth A. Williams, John C. Davison, Fred W. Sager, Jack J. Peacocke, Jack L. White and Raymond L. Jacobs, all from districts of The Ohio Fuel Gas Company. Ralph W. Ross, D. M. Winans Swan Hardware, Marietta, Ohio, was also a prize winner in Region B.

Sam Loper, Model Kitchen, Wichita, Kan., Harold Adams, The Gas Service Co., Wichita, and Merritt Jordan, Montgomery Division, Alabama Gas Corp., won $150, $125 and $100 respectively as first, second and third prizes in Region C.

Other prize winners in Region C included John N. Soard, Jr., Jett's, Inc., Lexington, Ky.; E. S. Stone, Mobile Gas Service, Mobile, Ala.; Hardin C. Short, Jett's, Inc., Lexington, Ky.; G. H. Lessman, Bob Gooldy Appliance Co., Independence, Kansas; Valjean F. Webb and Zebb W. Collins, both from Model Kitchen, Wichita, Kansas; M. A. Riboud, Peoples Water & Gas Co., Miami Beach, Fla.; and J. L. Buie, Mississippi Gas Co., Meridian.

Michael M. Musikantow, The Peoples Gas Light & Coke Co., Chicago, Ill.; Frank H. LeFrere, Central Illinois Light Co., Springfield, Ill.; and Michael N. Barbour, Michigan Consolidated Gas Co., were awarded $150, $125 and $100 each as first, second and third prizes for Region D. Other Region D winners included: George A. Morey, Central Illinois Light Co.; Nicholas P. Brower, Robert G. Grice and Lee Lampert, all from Michigan Consolidated Gas Co.; Jack Feinartz, Warren Speyer, Joseph A. Valentine and Theodore P. Karcher, The Peoples Gas Light & Coke Co.; were winners of awards, as was Roy Jacobson, the Hagen Co., Minneapolis, Minnesota.

Best retail salesman

George Kilpatrick, Temple Gas Equipment Co., Temple, Texas, was the best retail salesman in Region E. Clyde C. Logue, Jr., Southern Union Gas Company in Austin, and George Bitinis, from the Port Arthur branch of Southern Union, were tied and split second and third prizes with each receiving $112.50. Other winners in Region E were: John Rogers Cooke, Southern Union Gas, Austin, Texas; P. L. Murdaugh, Modern Appliance Co., Waco, Texas; Jack Barnett, Dobyns-Lantz Hardware Co., Stigler, Okla.; W. D. Johnson, Central Sales Co., Okmulgee, Okla.; Wilburn Ellis, Star Furniture Mart, Abiline, Texas; Robert Hullender, Hullender Music Co., Frederick, Okla.; Bill Richardson, Stone's Appliance Service, Durant, Okla.; James M. Migliavacca, Southern Union Gas, Galveston, Texas; and William S. Brown, Mason Electric Co., Tulsa, Oklahoma.

L. K. Ward, Gas Appliance Center, Los Angeles, won first prize of $150 in Region F, with Clarence E. Harlow, Harlow's Appliance Store, Loma Linda, Calif., winning the $125 prize and Horace M. Mathews, Southern Union Gas Co., El Paso, Texas, was winner of the third prize of $100. Other winners in this region were William F. Czuleger, Redondo Trading Post, Redondo Beach, Calif.; Horace Echols, Southern Union Gas Co., Clovis, New Mexico; Glen O. Leavitt, J. L. Case Co., San Diego, Calif.; Bridie O'Sullivan, J. J. O'Connell, Los Angeles, Calif.; Ray Howe, DeJong & Sons Hardware Co., Bellflower, Calif.; John J. Cox, B & C Household Mart, Compton, Calif.; Mary Jane Hess, Miller Bros., Hollywood, Calif.; Royal Miller, Miller's Home Appliance Co., San Bernardino, Calif.; and Porter D. Kuykendall, Kuykendall's Stove & Appliance Store, Los Angeles, California.

Robert Eldredge, The Brooklyn Union Gas Co., won top honors and $200 in cash for selling more gas refrigerators for apartment houses and other multiple housing installations than any other salesman in the United States. Other apartment house salesmen for gas companies who shared in top awards included William H. Denison, Michigan Consolidated Gas Co., Detroit, second prize $175; Hamilton King, Atlanta Gas Light Co., third place, $150; William J. Slinger, The Peoples Gas Light & Coke Co., Chicago, fourth place, $125; Joseph G. Zimmer, The Peoples Gas Light & Coke Co., fifth place, $100; and Raymond M. Drollinger, The Brooklyn Union Gas Co., sixth place, $100.

The Peoples Gas Light and Coke Co., Chicago, was awarded a handsome bronze plaque for selling more gas refrigerators to apartment houses and multiple dwellings than any other company in the country.

"Jet Freeze" bronze trophy plaques were awarded in each of the six regions to distributors attaining the highest percentage of Servel gas refrigerators against quotas for the April 1 to June 30 period. Distributors will be awarded "Clean Sweep" trophies in the second half of the contest. The winning distributor in each region will receive an "American Way" trophy and an expense-paid vacation flight for the top honor in the Big Six Campaign.

Winners of the distributor's trophies for the first quarter were Utilities Distributors, Inc., Portland, Maine, Region A; Van Zandt Supply Co., Huntington, W. Va., Region B; Union Appliance, Division of Midland Industries, Inc., Independence, Kans., Region C; Cook Appliances, Inc., Minneapolis, Minn., Region D; Hales-Mullaley Co., Inc., Oklahoma City, Okla., Region E; and American Furniture Co., El Paso, Texas, won the top prize in Region F.

Scranton celebrates expansion of gas facilities

Mayor James T. Hanlon of Scranton, Pa., pulling lever to start new gas-making facilities of Scranton-Spring Brook Water Service Company. Watching are (left to right) utility officials Harold Vicker and Harold Squier, vice-presidents; J. J. O'Leary, director; Milburn Sewell, superintendent of the gas plant, Mayor James T. Hanlon of Scranton and Rulison Evans, president of the Scranton company

NEW GAS-MAKING facilities have been completed by The Gas Co., Scranton Spring Brook Water Service Co., Scranton, Pennsylvania. Modernization and expansion of the gas plant has almost doubled its former generating capacity, making it one of the largest to manufacture gas with anthracite.

The event was hailed by numerous articles and advertisements in The Scranton Tribune on May 24. One article traced the history of the gas company from its charter 96 years ago. Another story described preparations for the expansion program and its direction by the president, Rulison Evans.

According to William H. Regan, merchandise manager, the gas company expects to sell more gas appliances and equipment this year than in 1949. Mr. Regan also noted that in the area automatic gas water heater sales are 50 percent ahead of last year. Floor furnaces and direct heating equipment are expected to be about 20 percent ahead of 1949, he added.

Mayor James T. Hanlon called the million-dollar expansion project "practical and tangible proof of the confidence of that company's management in Scranton's future."

A.G.A. announces new data on roasting in foil

ROASTING MEAT which is wrapped in foil may save time for the housewife or restaurant owner but probably will require more gas than the conventional method of roasting.

Results of a single controlled experiment conducted as part of the Association's current investigation of meat shrinkage during roasting, indicate nearly a 20 percent saving in time when using a turkey wrapped in foil. However, the amount of gas required for roasting the foil-wrapped bird increased nearly 40 percent. Edgar H. Mattson, South Jersey Gas Co., Atlantic City, is chairman, A. G. A. Subcommittee on Commercial Equipment Tests (of the Committee on Comparison of Competitive Services) which conducted the roasting study.

According to Mr. Mattson's report, the cost of roasting foil-wrapped meat, plus some loss of food quality, seems to rule out this method of roasting for home use. However, it is expected that the use of foil will prove attractive to commercial restaurants that are pressed for time.

The two turkeys used in the experiment contained the same amount of stuffing and were prepared identically. Two iron-constantan thermocouples were employed to measure internal temperatures.

For the test with the foil-wrapped turkey, the oven was preheated to 500° F to compensate for the insulating effect of the wrapping. For the unwrapped turkey the oven was preheated to 325° F. The same oven was used in both instances.

Cooking losses were determined in the form of volatile losses and dripping losses. These, in turn, were divided into losses occurring while the turkey was in the oven, and while the turkey was reaching its maximum temperature after removal from the oven.

Results of both tests are as follows:

	Wrapped	*Unwrapped*
Weight of turkey before roasting	11.06 lbs.	11.34 lbs.
Cooking losses		
Volatile loss in the oven	2.40 lbs.	2.07 lbs.
Dripping loss in the oven	0.63	0.79
Volatile loss out of oven	0.03	0.04
Dripping loss out of oven	0.02	0.10
Total cooking loss	3.08 lbs.	3.00 lbs.
Percent shrinkage	27.84	26.45
Time required for roasting	3 hrs., 15 min.	4 hrs., 0 min.
Energy consumption	54,700 Btu	39,450 Btu

Results were obtained from only one series of tests and therefore no definite conclusions can be established. Results do indicate, however, that the shrinkage occurring during roasting of the two turkeys was essentially the same. The time required for roasting and the energy consumption were the two most significant differences.

Comparative visual observations showed that the two turkeys were about equally browned, although the unwrapped fowl was browned a little more evenly. This may have been due to the fact that where the foil touched the wrapped turkey, temperature of the skin was increased, producing excessive browning.

When slicing the meat, it was noticed that the turkey roasted in the foil had a somewhat mealy appearance, whereas the unwrapped turkey seemed more moist. Limited taste tests confirmed this observation. The unwrapped turkey also was slightly more tender, but not significantly so.

A.G.A. graduates gas practice course student

AMERICAN GAS ASSOCIATION has presented the first certificate for completion of its home study course on American Gas Practice since supervision of the course was discontinued by Columbia University. Under the present arrangement, studies are conducted by Jerome J. Morgan, professor emeritus and author of the course, pending completion of a similar A. G. A. course by Institute of Gas Technology, Chicago.

John Thomas Harkins, Zion, Illinois, has received the first certificate of satisfactory completion. Mr. Harkins was born in Grant, Okla., and attended Southeastern Teachers College, 1940-41. During the past year he has been employed as a distribution clerk for North Shore Gas Co., Waukegan, Illinois.

Recently 15 employees of The Brooklyn Union Gas Company were enrolled in the Course on American Gas Practice.

Study sessions are divided into two parts—the first covers manufactured gas and the second deals with transmission, distribution, utilization and other gas company operations. Part 2 is equally applicable to manufactured and natural gas.

Further information on the course can be secured from American Gas Association or from Professor Jerome J. Morgan, 67 Salter Place, Maplewood, New Jersey.

Welker retires as gas companies' president

G. E. Welker

GEORGE E. WELKER, who has for many years headed United Natural Gas, Ridgway Natural Gas, St. Marys Natural Gas, Smethport Natural Gas, Mercer County Gas, The Mars Company and The Sylvania Corporation, all with principal offices in Oil City, Pa., has resigned as president of the companies effective September 1. He will continue for a few months as a director and in an advisory capacity.

Mr. Welker has been active in American Gas Association affairs for many years and is a past-chairman of the Associations Natural Gas Department.

Mr. Welker graduated from Clarkson College of Technology with a B.S. in civil engineering, and Michigan College of Mines with a degree of Engineer of Mines. Shortly thereafter he joined United Fuel Gas Co., Charleston, W. Va., as civil engineer and geologist.

In 1912 he entered the employ of National Fuel Gas Company by accepting the position of chief engineer and geologist for The Iroquois Natural Gas Company with headquarters at Buffalo, New York. He superintended a complete inventory and appraisal of all the properties of that company and helped install a perpetual inventory and mapping system. In 1916 he was delegated to perform a similar service for the Pennsylvania companies of National Fuel Gas.

In 1917 he moved to Oil City as chief civil engineer and geologist for United Natural Gas Company and consulting engineer for Pennsylvania Gas and other companies. From 1918 to 1924 he continued in that capacity and also carried on consulting engineering work, specializing in geology and in gas company appraisals and rate cases.

In 1924 he was elected a vice-president and director, United Natural Gas Company and The Mars Co., respectively, which positions he held until 1927 when he was elevated to the presidency of both companies. In 1928 he was also elected president and a director of Ridgway Natural Gas Co., St. Marys Natural Gas Company and The Sylvania Corp., all of which were formed to take over and operate newly acquired holdings of National Fuel Gas Company in Elk County, Pa., and vicinity. In 1930 he became a director and president of Smethport Natural Gas Company and in 1933 a director and president, Mercer County Gas Company. He has continued to serve as a director and president of all these companies until the present time. In addition he has served for several years as a director of National Fuel Gas Company.

Mr. Welker has served for many years as a director and for two years as president, The Pennsylvania Natural Gas Men's Association. During World War II he was a member of Petroleum Industry War Council's District No. 1 Committee on Natural Gas and Natural Gasoline. He was also a member of the Sub-Committee on Joint Use of Natural Gas and Gasoline Facilities for District No. 1.

Personal and otherwise

Long Island elects nine new officers

EIGHT assistant vice-presidents and an assistant to the president have been elected by directors of Long Island Lighting Co., Mineola, N. Y. All are career employees from within the organization.

Named to the newly created assistant vice-presidencies were: Louis A. Evarts, gas operating manager; Edward C. Duffy, electric operating manager; William Welch, Jr., engineering manager; Howard B. Wakeman, customer relations manager; William J. Schmidt, general sales manager; William A. Miller, Jr., personnel officer; Charles Y. Osburn, assistant to the operating vice-president, and Walter H. Seaman, insurance manager.

John J. Tuohy, attorney on the legal staff, was elected assistant to the president.

In addition to assuming their new executive responsibilities, these officers will continue their present departmental functions. Mr. Evarts, Mr. Welch, Mr. Wakeman and Mr. Schmidt are all members of American Gas Association.

Sales personnel promoted at Rochester

SYDNEY ALLING has been advanced from manager of industrial and commercial sales, Rochester Gas & Electric Corp., Rochester, N. Y., to general sales manager, a newly created post. A graduate of University of Rochester and Massachusetts Institute of Technology, Mr. Alling has served the company for 39 years.

Four other men have been promoted and will be associated with Mr. Alling to provide better coordination of the company's sales activities: Walter G. McKie, manager of domestic sales; R. Dewitt Pike, manager of industrial and commercial sales; J. Gordon Ross, manager of service and customer relations, and Donald K. Smith, manager of gas heating sales.

Mr. Alling, Mr. McKie and Mr. Ross are all members of American Gas Association.

Reker elected director of Ebasco Services

CARL H. REKER, a general consultant of Ebasco Services Inc., New York, N. Y. has been elected a member of the company's board of directors.

Mr. Reker is a graduate of Sheffield Scientific School of Yale University, with the degrees of Ph.B and M.E. He is now a professional engineer in the State of New York, a member of American Society of Mechanical Engineers and of the Executive Committee, Yale Engineering Association. He has served with Detroit Edison Co., Union Electric Light & Power Company and West Penn Power.

Mr. Reker joined Ebasco on August 12, 1929. In 1932 he was appointed chief rate consultant, and later, assistant head of the rate department. Since 1944 he has been serving as a general consultant to a number of operating utility companies with electric, manufactured and natural gas, steam heat and transit operations.

Cooper made comptroller at Public Service

F. WARREN COOPER has been appointed comptroller, Public Service Electric and Gas Co., Newark, N. J., replacing Franklyn Heydecke who retired recently. Frank Freer, Jr., has been named to succeed Mr. Cooper as assistant comptroller.

Mr. Cooper is a graduate of New York University. He joined Public Service in 1920, later rising through various positions to assistant general auditor and in January 1948, to assistant comptroller. Mr. Cooper and Mr. Freer are both members of American Gas Association.

Mr. Heydecke has served with Public Service and predecessor companies for 50 years. A graduate of New York University's School of Commerce, Accounts and Finance, he started in 1900 with Essex and Hudson Gas Co., a predecessor of Public Service. When Public Service was organized in 1903, he was transferred to the company's general office in Newark. After serving in various posts, he became general auditor of the electric and gas departments in 1940. In January 1948 Mr. Heydecke was made comptroller.

His industry activities include the position of current president, New Jersey Utilities Association.

Banks made Southern California president

F. M. BANKS has been elected president and general manager of Southern California Gas Co., effective August 1, following resignations of F. S. Wade as president and of LeRoy M. Edwards as vice-president and special counsel. Mr. Banks was made vice-president and general manager last August when Mr. Wade resigned the general managership of the company.

Mr. Edwards also resigned as vice-president and general counsel for Southern Counties Gas Co., and as vice-president and general manager of Pacific Lighting Gas Supply Co., both affiliates of Southern California Gas Company. Mr. Wade and Mr. Edwards continue as directors of the company. In addition, Mr. Wade has been elected chairman of the board of directors.

Mr. Edwards plans to engage in private law practice and at the same time has been retained by both Southern California and Southern Counties Gas Companies as special counsel. Mr. Wade, while relinquishing entirely any active direction of the company, continues to maintain offices at 810 South Flower St., Los Angeles, and is available to the company in an advisory capacity.

The careers of Mr. Wade and Mr. Edwards in the utility business in Southern California have run parallel for more than 40 years. As executives in affiliated enterprises, the two men were among those who pioneered in tapping the vast natural gas resources of the state.

Mr. Wade was elected president of Southern Counties Gas Company in 1928, and president and general manager of both the Southern California companies in 1939. He relinquished his position with Southern Counties in 1947, but retained the presidency and general managership of Southern California Gas Company until last year, when he turned over the position of general manager to Mr. Banks.

F. M. Banks

F. S. Wade

L. M. Edwards

Mr. Edwards served as president and general manager of Industrial Fuel Supply Co., later to be merged with other pipeline companies into Pacific Lighting Corporation. His pipeline companies were affiliated with Southern Counties Gas Company. With the merging of Los Angeles Gas & Electric Corporation and Southern California Gas Company and affiliation of the latter with Southern Counties in the 30's, he became a vice-president and counsel of both the distributing companies. He also became general manager of the pipeline company.

Both men are members of American Gas Association. Mr. Wade is also a former director of A. G. A. and served on a predecessor of the present PAR Committee. Mr. Wade is a graduate and trustee of University of Southern California. Mr. Edwards is a law graduate of Stanford University.

The newly elected president, Mr. Banks, completed his education at Colorado School of Mines and Massachusetts Institute of Technology. Mr. Banks joined Southern California Gas Company in 1922. In 1930, he was made general superintendent of sales, and in 1934, became vice-president in charge of sales, advertising and public relations. He was elected vice-president and assistant general manager in August 1948, and a year later was made vice-president and general manager.

Mr. Banks is currently a director of A. G. A. He is a past-chairman of the Association's Residential Gas Section, and chairman of the former A. G. A. Special Committee to Study the Research and Promotional Plan.

Paulin advanced to vice-president in Detroit

ROLAND R. PAULIN has been promoted to vice-president and assistant engineer, Michigan Consolidated Gas Co., Detroit.

Mr. Paulin has been assistant manager of operations for the past year, and for five years previously was commercial office manager. He has been with the company for 24 years, having started as a cadet engineer in the manufacturing department upon graduation from Purdue University in 1926 as a chemical engineer.

Mr. Paulin has served at various times as general foreman of the manufacturing department, as a heating engineer and assistant to the sales manager and as supervisor of the industrial sales department. He is a member of American Gas Association and Michigan Gas Association.

Eacker receives standardization award

EARL H. EACKER, president, Boston Consolidated Gas Co., Boston, Mass., was awarded a certificate for his outstanding service in standardization at the annual president's luncheon of American Standards Association on June 22.

Mr. Eacker, a member of the ASA board of directors, received the certificate in appreciation of his contributions to standardization, not only in his own company and industry, but particularly in development of American Standards. The award recognized his support of the standards movement which is designed to help advance the national economy. Mr. Eacker was nominated by American Gas Association as a member of the ASA board.

For many years, Mr. Eacker has been a member of various sub-committees of American Gas Association's Approval Requirements Committee. These groups help in the preparation of standard performance requirements for gas-burning appliances and accessories. His experience in the public utilities field dates back to 1923 when he first became associated with Charlestown Gas and Electric Company. He was named president, Boston Consolidated Gas Co., March 1948. Mr. Eacker currently is a director of American Gas Association.

E. H. Eacker

Wiegel elected treasurer of Lone Star

WILLARD G. WIEGEL has been elected treasurer, Lone Star Gas Co., Dallas, Texas, to succeed H. G. Cornatzar who retired from the company after more than 33 years of service. Taking over his new duties on August 1, Mr. Wiegel retains his position as director of personnel.

Mr. Weigel joined the company in 1928 as special representative. The following year he was assigned to the advertising department as assistant to the director, and in 1930 was appointed advertising manager. He served in that capacity until his appointment as personnel director in October 1942.

He is active in American Gas Association and in 1948 was chairman, A. G. A. Southwest Personnel Conference. He is also past-president, Dallas Advertising League, and received its most valuable member award in 1937.

Mr. Cornatzar, the retiring treasurer, joined Lone Star in 1917 as a bookkeeper. He became the company's first traveling auditor in 1918 and in 1920 was named assistant secretary. Two years later he was given the additional duties of assistant treasurer. In 1942 he was named treasurer of the company. He is also a member of American Gas Association.

W. G. Wiegel

Pacific Gas and Electric officials advanced

NORMAN R. SUTHERLAND, vice-president and assistant general manager, Pacific Gas and Electric Co., San Francisco, California was advanced to vice-president and general manager on August 1, succeeding W. G. B. Euler.

Mr. Euler became executive vice-president of the company. He will assist the president, J. B. Black, in general supervision of the company's affairs. In addition, Mr. Euler will direct the purchasing department and the department of general construction, which is now completing the company's $800 million postwar expansion program.

Mr. Euler and Mr. Sutherland have served in the Pacific Gas and Electric Company organization for 40 years and 37 years, respectively. Both men are members of American Gas Association.

N. R. Sutherland

W. G. B. Euler

Parrott new president in Roanoke

APPOINTMENT of John C. Parrott, a Roanoke, Va. businessman, as president of Roanoke Gas Company was announced recently along with the resignation of Michael E. Shea, Lynchburg.

Mr. Shea has been president for a number of years and laid the ground work for bringing natural gas to Roanoke. He will devote his full time to Lynchburg Gas Co., which he heads and to his natural gas investments. The change is effective August 1.

Mr. Parrott became president in April of Roanoke Pipe Line Co., organized by Mr. Shea and his associates to pipe natural gas to the city for Roanoke Gas Company. Mr. Shea is a member of American Gas Association.

Transcontinental official

E. C. McGraw

ELECTION of E. Clyde McGraw as vice president in charge of operations has been announced by Transcontinental Gas Pipe Line Corp., Houston, Texas. Mr. McGraw has resigned as vice-president, of Stone and Webster Service Corp., New York, N. Y., and as an official of two electric companies to assume his new duties with the Texas-to-New York natural gas carrier.

Since graduating in engineering from University of Nebraska, Mr. McGraw has had a varied and distinguished career in public utility construction and operation. He is currently a member of American Gas Association.

Detroit appointment

APPOINTMENT of Frank H. Hughes as director of purchases, American Natural Gas Service Co., Detroit, Mich., has been announced by Henry Fink, president.

F. H. Hughes

American Natural Gas Service Company furnishes engineering, accounting and other technical services to its affiliates, Michigan Consolidated Gas Co., Michigan Wisconsin Pipe Line Co., Milwaukee Gas Light Company and the parent organization, American Natural Gas Company.

Mr. Hughes has been in public utility purchasing for the past 24 years, serving at various times as director of purchases, North American Light and Power Co., Northern Natural Gas Co., Illinois Power Company and United Light and Railways Service Company.

Stratigrapher named

ROBERT E. BAYLES has been appointed chief stratigrapher for Consolidated Natural Gas Company.

Mr. Bayles, who will work out of the Pittsburgh office of The Peoples Natural Gas Co., will be responsible for special stratigraphic studies and surface geological problems for the various subsidiaries of Consolidated Natural Gas Company.

Jersey Central appoints

ETHEL LORD, Reading, Pa., has been appointed customer representative for Jersey Central Power & Light Co., Asbury Park, N. J. Miss Lord will be available for talks and lectures before women's organizations, parent-teacher associations, schools, church groups, service clubs, and other groups. She has 15 years of background and experience in customer representative work.

Southern Union appoints

A. D. Schrodt

ALLEN D. SCHRODT, Dallas, Texas, has been named sales coordinator in charge of the merchandise sales division, a new department of Southern Union Gas Company.

Creation of the department resulted from the recent expansion of Southern Union, which through merger, purchase and growth added 85,000 new customers last year.

Merchandise sales heretofore were handled by the company's purchasing department, in which Mr. Schrodt served as assistant purchasing agent two years. Since July 1948, he has headed the company's land and lease department. He is a member of Southern Gas Association.

Ferguson moves up

WILLIAM E. FERGUSON, who has served The Ohio Fuel Gas Co., Columbus, for 33 years, has been appointed manager of production. He had been assistant manager since 1944. The position of manager had been vacant since 1947, when E. C. Overbeck, now company president, was elevated to vice-president.

W. E. Ferguson

Mr. Ferguson started work as a draftsman, later was promoted to chief civil engineer. He then was named superintendent of the lease and engineering departments before becoming assistant manager of production. He is a member of American Gas Association.

New honors for Hulcy

SEVERAL NEW HONORS have been added to a long string of titles possessed by D. A. Hulcy, vice-president of American Gas Association, and president, Lone Star Gas Co., Dallas, Texas.

Mr. Hulcy has been appointed a member of the Association's National Defense Committee. About the same time, he was named a member of the Committee on Petroleum Industry Steel Requirements, National Petroleum Council. He has also been made a member of the Council's Committee on Petroleum Industry Transportation.

During the recent commencement exercises of Texas Wesleyan college in Fort Worth, Texas, Mr. Hulcy received the honorary degree of Doctor of Laws. He also delivered the commencement address to 151 members of the graduating class.

Worry

● Worry often gives a small thing a big shadow. —*Swedish proverb*

Hornby promoted by Pacific Lighting

ROBERT A. HORNBY has been made executive vice-president, Pacific Lighting Corp., San Francisco, and also of a pipeline subsidiary, Pacific Lighting Gas Supply Company. LeRoy M. Edwards has resigned as vice-president and director of both organizations.

Also made officers of the latter organization are: Marion L. Fort, former general superintendent, elected vice-president and general superintendent; C. E. Pearman, former treasurer and comptroller, elected vice-president and treasurer, and Raymond W. Todd, chief engineer, elected a director to fill the vacancy created by retirement of Mr. Edwards. All are members of American Gas Association.

Mr. Hornby is immediate past chairman of American Gas Association's PAR Committee. He has been connected with California utilities for the past 30 years. Following service with California Public Utilities Commission, he first served with Pacific Lighting System in 1925 as valuation and rate engineer, then as comptroller, Southern California Gas Company. In 1930 he became executive engineer, Pacific Lighting Corp., and since 1937 has been a vice-president of the corporation. He is a past-president of Pacific Coast Gas Association.

R. W. Todd

R. A. Hornby

Mr. Edwards has been in the utility business in Southern California for more than 40 years.

Stone & Webster Service Corp. names officials

ELECTION of Robert W. Ducker and Russell E. Ritchie as vice-presidents, Stone & Webster Service Corp., New York, N. Y., was announced recently.

Mr. Ducker joined the company in 1944 after a two year association with the office of Petroleum Administrator for War, first as chief of the Natural Gas Section and later as assistant director of natural gas and natural gasoline. Prior to the war, he had been associated for many years with Oklahoma Natural Gas Company.

Mr. Ritchie has been associated with the Stone & Webster organization since his graduation with an engineering degree from University of Wisconsin in 1925. He is currently a member of American Gas Association.

In recent years both men have been active in advising clients of the corporation on problems incident to the development and operation of manufactured and natural gas systems.

R. W. Ducker

R. E. Ritchie

Manufacturers announce personnel changes

● **American Meter Co.,** New York, N. Y. —Alexander B. Cloud has been appointed district sales manager of the New York territory. He is a member of American Gas Association, Liquefied Petroleum Gas Association and Instrument Society of America.

John Gribbel, II, has been appointed district sales manager for American Meter's Philadelphia sales territory. He is a member of American Gas Association, Liquefied Petroleum Gas Association and various state and local gas organizations. He is also a director of Tampa Gas Co., Tampa, Florida.

● **Rockwell Manufacturing Co.,** Pittsburgh —Two long-time employees with markedly similar careers retired recently. J. "Ed" Brown has been affiliated with the company and its predecessors for 44 years and Elmer G. Trimble for 48 years. Mr. Brown has been assistant to the vice-president of sales since 1944. Mr. Trimble has been assistant district manager of the Pittsburgh district since 1944.

Brooklyn Union elects vice-president

GLEN E. FOSTER was elected vice-president, The Brooklyn Union Gas Co., Brooklyn, N. Y., at a meeting of the board of directors on July 26.

Mr. Foster joined Brooklyn Union in 1933 as an assistant auditor, having previously been engaged in public accounting with the firm of Arthur Andersen and Company. In 1937 he was elected comptroller and in December 1945 was made an assistant vice-president.

Mr. Foster is a member of American Gas Association and Controllers Institute. He served as president of the institute in 1942.

Equitable Gas appointments announced

THREE NEW APPOINTMENTS have been announced for Equitable Gas Co., Pittsburgh, Pennsylvania. F. B. Jones has been appointed manager of the company's newly organized economic and management research department, and William E. Nary has been made director of publicity for the company. John R. Leggate has been appointed manager of customer service, general sales department.

Mr. Jones' new department will assist all departments in the company and its affiliated gas companies on matters pertaining to economic and management problems. It will be responsible for executing research work concerning sales and markets, operating expenses, and industry and economic trends. In addition, it will be charged with general responsibility for rates and rate studies.

A graduate of University of Kentucky, Mr. Jones is well known in sales and market research studies. Since joining Equitable Gas Company as an industrial engineer in 1925, he has served as industrial gas sales engineer, industrial gas supervisor, director of industrial gas sales, general sales manager, and more recently as manager of sales and market research. He has also served as member and chairman of various sales, advertising, research and economic committees in American Gas Association.

F. B. Jones

W. E. Nary

J. R. Leggate

Mr. Nary, a graduate of University of Pittsburgh, joined the advertising department of Philadelphia Company and subsidiaries in July 1936. Since February 1945 he has been editor of *Public Service*, the companies' employee magazine, and has held various publicity and public relations assignments.

A graduate of Washington and Lee University's School of Business Administration, Mr. Leggate joined Philadelphia Company and subsidiaries in 1925 as a clerk in the retail sales department. Since then he has served in that department in several capacities.

Commercial men open gas service drive

a PAR activity

NEWEST DEVELOPMENT in the commercial cooking field is an intensive campaign to "Keep 'Em Cooking with Gas." Sponsored by American Gas Association under the A.G.A. PAR Plan, the drive opened in September and will continue through the fall months.

"Keep 'Em Cooking with Gas" has been designed as a practical service program. "A. G. A. Proof of Profits" campaign, originally scheduled to open in September, has been deferred to a later date because of the increased demand for commercial cooking equipment brought on by the Korean crisis.

Initiation of the "Keep 'Em Cooking" program at this time will help to keep the commercial customer sold on gas service and create a desire to obtain modern gas cooking equipment when it becomes more readily available. One feature of the new campaign is provision for a thorough inventory of customers' equipment in hotel, restaurant and institutional kitchens. Gas companies are urged to initiate this study as a source of prospects for replacement sales when the postponed "Proof of Profits" sales effort is started.

A. G. A. Industrial & Commercial Gas Section has prepared a special inventory form which can be retained as a permanent record of the condition of customer equipment. Provision is also made on the form for information on other commercial uses of gas such as water heating, space heating, air conditioning and refrigeration. Copies of this Commercial Cooking Equipment Record Form may be purchased direct from A. G. A.

"Keep 'Em Cooking with Gas" tells the customer how to use and maintain his gas equipment so as to prolong its life. Four special pieces are available from A. G. A. to help the customer handle his cooking tools in the recommended manner.

First of these is a brand new pamphlet "Latest News in Meat Shrinkage." This is laid out in newspaper format and includes three news stories showing the commercial customer how to reduce his meat shrinkage by using gas roasting ovens.

Second item is "Thrifty Tips," a 12-page booklet with ten humerous cartoons that tell the cook and baker how to get most efficient use from his gas equipment, how to keep fuel bills at a minimum and obtain the maximum number of servings from the food purchased.

Another helpful item is the Maintenance Service Chart, a 17" by 22" sheet to be hung on commercial kitchen walls. The chart is a colorful broadside detailing steps to insure long life and efficient operation of gas-burning equipment in the commercial and institutional kitchen.

Also in the portfolio is a "how-to-do it" booklet suggesting ways that gas companies can obtain maximum results from the "Keep 'Em Cooking with Gas" campaign.

Industrial relations

(Continued from page 24)

The list was divided into two groups, professional and related occupations and skilled occupations.

"In the preparation of the list of critical occupations, selection of specific occupations was made on the basis of three major considerations," Mr. Tobin said:

(a) The demand, in essential industries and activities for persons qualified to work in the occupations would exceed the total supply under conditions of full mobilization.

(b) A minimum training time of two years (or the equivalent in work experience) is necessary to the satisfactory performance of all the major tasks found in the occupation.

(c) The occupation is essential to the functioning of the industries or activities in which it occurs.

"The list of critical occupations is in two parts: Part I provides occupational titles only; Part II includes definitions of the occupations. The definitions refer to the Dictionary of Occupational Titles of the United States Employment Service (1949 Edition) whenever possible.

Complete definitions and lists are available. Write U.S. Department of Labor, Washington, D. C.

● **Reemployment rights extended**—Inductees, enlistees and reservists who leave their jobs to enter military service are entitled to reemployment rights under the recent law extending the Selective Service Act, according to the Secretary of Labor. Reemployment rights apply to anyone who enlists before July 9, 1951 if it is his first enlistment since June 24, 1948 and to any reservist who enters active service between those two dates whether with or without his consent.

● **The boom is on** for hiring plant guards. Plant protection departments—stripped to the bone in postwar—are being revived and expanded. Arming of guards is also back again. Increase in plant police has a collective bargaining overtone. Under the Taft-Hartley Act, plant guards cannot belong to the same union as rank-and-filers. They must be independent.

● The birthday issue of the Bureau of Labor Statistics' Monthly Labor Review is a "must" for management. Just out, it features in 200 pages: (1) articles on labor progress from 1900 to 1950; (2) a reappraisal of some of the influential labor literature of the period, and (3) a 50-year chronology of important labor events. Order it (40 cents) through BLS, Washington 25, D. C.

● **Wage negotiations analyzed**—The National Industrial Conference Board in a recent report, Studies in Personnel Policy, No. 105, has analyzed 576 contracts that were signed or reopened during 1949. The study reveals that a new trend was started on September 10 after the President's Steel Fact-Finding Board turned down the CIO steel workers on a wage boost, and instead recommended they be granted pensions and group insurance. Up to that time wage settlements figured most prominently, but after the recommendations were made by the board, wage increases were pushed into the background. Only six percent of the workers covered by contracts signed after September 10 were granted wage boosts. Nearly half of the contracts signed after that date provided pensions or group insurance.

No over-all pattern for a fourth-round of wage increases developed in the past year. About half of the contracts did not provide for wage increases. Almost 6 percent signed short-term extensions of their previous contracts without raising wages, and less than four out of ten contracts showed a wage boost. However, where management and union negotiators agreed to a wage boost, the most frequent figure was a five cent an hour increase. Nearly all of these were signed prior to the Steel Fact Finders Report.

Although there was no over-all fourth-round wage boost pattern, certain industries, particularly non-manufacturing, developed a pattern. The AFL Unions fared better than the CIO in getting wage increases, but the CIO led in securing benefits. The UAW-CIO came into 1950 with a status of 36 out of 72 contract negotiations still undecided. In 36 of these where an agreement was reached, two resulted in new or liberalized pension plans.

Twenty-seven contracts for the first time provided unworked paid holidays, and 16 incorporated the standard six holidays a year. Forty-four contracts established additional paid holidays over and above the standard six with Washington's Birthday or Armistice Day being the holidays most frequently added. In 88 contracts new holidays were called for, and in 139 a new or more liberalized vacation plan was agreed upon. Sixty-one of these provided for longer vacations for long-service employees. In about half of these contracts, three-week vacations were granted to employees with 15 years service. In 17 additional contracts, vacations were liberalized for employees with three years of service or less.

● **The National Labor Relations Board** recently announced two new policies to be followed in determining back pay awards to employees discharged in violation of the Taft-Hartley Act. The first policy requires that an employee illegally discharged must make a reasonable effort to find desirable new employment while his case is pending in order to be eligible for back pay. The board announced this policy in a decision

involving Harvest Queen Mill and Elevator Co., Plainview, Texas, and also stated that it will regard registration with state offices or with the United States Employment Service as conclusive evidence that a reasonable search for new employment has been made.

The second policy requires that back pay awards for illegally discharged employees are to be computed on a quarterly basis beginning on the first day of January, April, July and October. In the future, the amount of the award will be determined by deducting the new earnings through other employment during any quarter from that which an employee would have normally earned in the same quarter, had he not been discharged. Earnings in one particular quarter shall not affect the back pay liability for any other quarter.

Purpose of this is to prevent an employee's loss of old age pension credits under the Social Security Act; to prevent later earnings at a higher rate from cutting down the amount of back pay due for the period of illegal discharge; and to eliminate the necessity of waiving the right to reinstatement in order to preserve back pay when the employee accepts another job at a higher rate while waiting for a decision in his case. This policy was announced in a case involving AFL Retail Clerks and a Cincinnati store of F. W. Woolworth Company. The board also stated, that in order to insure proper determination of back pay awards, in the future employers will be required to make available all pertinent pay roll records, etc., to the board or its agents.

● **At the Communication Workers of America** convention (CIO) held in Cleveland the latter part of June, Arthur J. Goldberg, general counsel for the CIO, presented a new idea that may be included as a demand in the CIO steelworkers wage reopening negotiations which are coming up in November.

Mr. Goldberg stated that the steelworkers may ask for unemployment compensation. He said that if the steel companies were required to pay workers about ¾ of their regular wages during periods of unemployment up to 40-50 weeks the steel companies might then lend support in asking Congress for improvements in unemployment compensation benefits. The proposed idea also indicates the union's interest in a guaranteed annual wage since unemployment compensation benefit payments over a substantial portion of the year, in effect, almost amount to guaranteeing the income of the worker on an annual basis.

● **Kentucky Utilities Company** was not required to bargain with a Local of the AFL Electrical Workers which was represented by a negotiator, not selected by union members, who openly expressed hostility toward the company and hoped that it would go broke. United States Court of Appeals made this ruling when it would not enforce a National Labor Relations Board order requiring the company to bargain with the union. An employee, who had been fired, later became the international representative for the union. The company refused to bargain with the local because of the former employee's expressed hostility, because the local had agreed, though only orally, that he would not be used in negotiations, and because he had not been selected by the union members as their representative. The court did hold, however, that the company was obliged to bargain with a local whose membership was not entirely composed of the company's employees. But in this case, the court said that any attempt at good faith collective bargaining would be futile because of the discharged employee's actions.

● **Area-wide pension plan** that allows workers who quit their jobs to take their pension credits to their new places of employment, has been negotiated by the CIO Auto Workers' Union with 70 employer-members of the Automotive Tool & Die Manufacturers' Association in Detroit. The plan covers all employees who work for members of the association.

● **Equal pay for women**—The Senate Labor Committee has just approved a bill to insure women the same pay as men for the same work. Employers who violate the bill would face criminal penalties and be ineligible for government contracts.

● **Tests of management**—See July 1950 issue of *Fortune Magazine*, page 95, for a significant article on Testing in Industry. The article opens thus:

"Nothing more significant has happened in management since the war than the fact that many companies have begun to experiment psychologically on their supervisory and top executives. Management men in such companies as Standard Oil, Sears Roebuck, Inland Steel, Union Carbide & Carbon and General Electric may not need an industrial psychologist to tell them that many of their business troubles stem directly from their own personalities. But by undertaking to expose themselves to a superficial diagnosis many are learning not only what their troubles are but also how to make the most of their abilities. The analysis of management's quirks and weak spots is turning out to be a difficult and touchy job. But it could do more for business efficiency than all the psychology testing of employees that has been done in the last 30 years."

The following material was a presentation of tests for industrial personnel and the experiences of various industries with the variety of tests. Ample illustrations are used to clarify the form of tests discussed. Reprints may be requested from *Fortune Magazine*, New York.

F. Vern Semple

assistant secretary and assistant treasurer, American Stove Co., St. Louis, Mo., collapsed and died suddenly of a heart attack Thursday evening, August 11.

Born in Huntsville, Mo., he first went to work in the Kaw Boiler Works, Kansas City, Missouri. Two years later, he joined American Stove Company as a clerk in the office of O. E. Jaeger, secretary of the sales committee. A series of promotions followed, culminating in his appointment from chief accountant to assistant secretary and assistant treasurer, April 21, 1949.

Mr. Semple was secretary of the St. Louis chapter, National Association of Cost Accountants. He is survived by his wife, a daughter, and two sons.

Bernard M. Laulhere

former manager of engineering services for Southern California Gas Co., died in Los Angeles, Calif., on August 5 following a prolonged illness that had kept him partially incapacitated since 1948.

Born in France, Mr. Laulhere was brought to California at an early age, later attending Stanford University. He was employed in 1921 by Midway Gas Company and worked in various engineering capacities. In 1923 he became superintendent of transmission, Midway Gas Company. He was active in construction during the development of the highly productive Santa Fe Springs, Signal Hill and Huntington Beach oil and gas fields.

Later he returned to engineering work for Southern California Gas Company as supervising engineer and later as manager of engineering services. He was assigned to the construction of the 1,200 mile Texas-California natural gas transmission line in 1946 and 1947. Shortly after its completion he suffered his first illness from which he failed to recover completely. Mr. Laulhere was a member of American Gas Association.

He is survived by his wife, Blanche, daughter, Virginia, son, Bernard and four grandchildren.

Otto C. Mauthe

in charge of publicity, press relations and employee publications for both Southern California and Southern Counties Gas Companies up to the time of a disability beginning in June 1949, died at a rest home in Pasadena on June 25, 1950. He had been in a coma for a year.

He attended University of Oregon and served with the California utility organization from December 1933 until the merger by the former Los Angeles Gas & Electric Corporation. Throughout his entire gas company career he was engaged in publicity and press relations work.

Mr. Mauthe was active in American Gas Association and a member, A. G. A. Publicity and Advertising Committee.

He is survived by his wife, Elizabeth, and two young sons, Otto III and Andrew.

Pacific Coast gas men elect Lawson president

E. G. LAWSON, president, Pacific Public Service Co., San Francisco, was elected president of Pacific Coast Gas Association during the group's fifty-seventh annual convention in Seattle, July 31-August 3.

W. M. Jacobs, vice-president, Southern California Gas Co., was elected vice-president of PCGA. Harry McGann and Grover S. Tracy, Pacific Gas and Electric Co., San Francisco, were named treasurer and assistant treasurer, respectively.

Some 616 persons attending the convention heard a variety of addresses based on the expectation that a natural gas supply would be available to the Pacific Northwest in the reasonably near future.

Speaking as retiring president of the association, N. Henry Gellert, president, Seattle Gas Co., said that public utilities will continue to play a major role in making "this nation prosperous in peace and mighty in war."

The American gas industry has a keen responsibility for high business statesmanship, according to Hugh H. Cuthrell, president, American Gas Association. Mr. Cuthrell showed that the industry chose to take the "high road" a few years ago and that this decision was followed by development of the powerful A. G. A. PAR Plan —PAR for Promotion, Advertising and Research.

E. G. Lawson

W. M. Jacobs

Harry McGann

Ernest C. Manning, premier, Province of Alberta, said, in effect, that the extent of Alberta's natural gas reserves and the disposition of any surplus above its own needs is now being studied thoroughly.

A call for more popular-type publicity was voiced by another speaker, Stanley H. Hobson, president, Gas Appliance Manufacturers Association. With confidence inspired by utility cooperation, manufacturers will do their part in improving gas appliances to "accelerate obsolescence," Mr. Hobson continued.

High Btu oil gas for interim use and natural gas standby was discussed by K. W. Stookey, president, The Gas Machinery Co., Cleveland. He noted that the Pacific Northwest is distant from known sources of natural gas and probably will be supplied through one line. Mr. Stookey's advice was "Don't get caught with your plants down."

The story of how Minneapolis built its natural gas sales was told by Harry K. Wrench, president, Minneapolis Gas Company. Mr. Wrench outlined steps which his company followed to work out a comprehensive dealer plan in Minneapolis. He also showed how a hard-hitting advertising campaign on the theme "Cleanliness Is Natural" has paced a growing swing to gas.

George F. Mitchell, president, The Peoples Gas Light & Coke Co., Chicago, discussed promotional rates for natural gas sales. "We established therm rates," he said, "15 months prior to changing the heating value—the cubic foot rate remained as an optional rate. The therm rate did a magnificent job for us."

The role of regulation was discussed by the next speaker, Owen Clarke, chairman, Washington Public Service Commission. "Sound, sensible, equitable government regulation of industries affected with a public interest is the greatest bulwark we have against government ownership of those industries," he said.

Joseph E. Muckley, vice-president, Seattle-First National Bank, told his audience that the gas industry and members of regulatory commissions must insure that the industry can continue to be financed on attractive terms.

Other features of the convention were the presentation of awards and election of Franklin S. Wade to honorary membership. Mr. Wade was president of PCGA in 1923 and helped to finance the association's reorganization in 1924. On August 1, 1950 he retired as president, Southern California Gas Co., but continues as chairman of the board.

E. G. Lawson, PCGA president-elect, announced that the 1951 convention will be held in San Francisco, September 4-6, with headquarters at the Fairmont Hotel.

Associated organization activities

SGA holds two-day program for home service

A GROUP OF 50 home service and sales representatives attended Southern Gas Association's two-day home service conference in New Orleans, La., August 17 and 18. Vivian L. Marshall, home service director, New Orleans Public Service Inc., acted as sponsor.

Practical applications of home service work were stressed on the program. Subjects included: gas laundry dryers, the gas refrigerator, gas and electric competition, using food from the freezer, television, and school programs. Also featured were a club demonstration on Creole cookery and a discussion of automatic ignition for gas ranges.

Attending the conference were home service directors from the following companies: New Orleans Public Service Inc., New Orleans, La.; Louisiana Power & Light Co., New Orleans; Oklahoma Natural Gas Co., Tulsa; Lone Star Gas Co., Dallas, Texas; Alabama Gas Corp., Birmingham, Ala.; Nashville Gas & Heating Co., Nashville, Tenn.; Southern Union Gas Co., Dallas, Texas; Atlanta Gas Light Co., Atlanta, Ga.; United Gas Corp., Houston, Texas; Houston Natural Gas Corp., Houston, Texas; Arkansas Western Gas Co., Fayetteville, Ark.; Chattanooga Gas Co., Chattanooga, Tenn.; South Carolina Electric & Gas Co., Columbia, S. C., and Gulf Public Service Co., Inc., Lafayette, Louisiana.

Home service group attending SGA conference. Vivian Marshall (front row, sixth from left), was chairman of the meeting; Harriet Pruitt (rear row, far left) was 1949 sponsor

Preparedness

(Continued from page 9)

ence in New Orleans on requirements and procurement of pipe and other materials, operation and installation, use of equipment. September 15—Employee relations section in New Orleans to discuss manpower problems of gas industry in the South and Southwest. November 9 and 10—top-level management representative conference in Houston, Texas, to discuss management problems and lay groundwork for all-out participation by the industry in event of a full-scale war.

A.G.A. Executive Board has authorized the Association to set up a program to keep all elements of the gas industry informed on developments in the industrial relations, employee relations and public relations fields. The program will also cover any special drives on national defense issues. First step under this program is the establishment of a semi-monthly Information Service which will be mailed to all A. G. A. members starting on July 28, 1950.

A. G. A. Annual Convention and GAMA Appliance Exposition will occur as previously planned. The two events are expected to help gas men adjust their thinking to the preparedness situation and to prepare for an all-out war effort, a continuing partial emergency or any other situation that develops.

Old Stove Round Up and other gas industry promotions will be designed to help assure a stabilized, vigorous American economy. Farsighted managements are determined not to make the mistake of releasing well-trained sales staffs. Campaigns such as the new "Keep 'Em Cooking with Gas" will keep the customer sold on the advantages of gas service, tell how to use and maintain modern gas appliances.

New York State Civil Defense Commission on August 2 directed the State's Public Service Commission to take "adequate measures" to assure light, power, gas and other utility services in event of an attack. It urged that an understanding be reached with officials of adjoining states to permit interstate exchange of utility services to an affected area in event of war.

U. S. Department of Commerce is reported making plans to administer the Defense Production Act of 1950 in the event its administration is assigned to that department. An interested visitor at the A. G. A. Defense Committee meeting in New York last month was the Assistant Secretary of Commerce.

Philadelphia Electric Company has instituted far-reaching security and defense plans designed to maintain service in emergencies through full mobilization of the company's resources. A defense coordinator and deputy defense coordinator have been appointed.

Jersey Central Power & Light Co., Asbury Park, N. J., has set up special security measures for the protection of vital gas and electric facilities serving the area. According to President E. H. Werner, "all contingencies of war, in so far as they are perceivable have been taken into account in the over-all plan to be supervised by a special emergency director." The company's $25 million expansion and improvement program will provide a valuable reserve of service facilities in event of emergency, Mr. Werner explained.

Tremendous expansion of the natural gas industry in the last five years means that this natural fuel can be counted upon heavily to ease the nation's transportation burdens during industrial mobilization. This is the considered opinion of W. Paul Jones, president, Servel, Inc., Evansville, Ind., and other gas industry executives.

Reserve unit first called—The 395th Engineer Gas Generating Detachment is Oregon's first army reserve unit to be called to active duty since the start of fighting in Korea. The unit has been sponsored by Portland Gas & Coke Company since 1948 and all but three of its members are employees of the utility. The company itself has offered its cooperation to civilian defense authorities—keeps an up-to-date call list and complete instructions for use in event of emergency.

These are early reports of gas industry contributions to the preparedness effort. Other reports will be analyzed as they are received and the most important ones published in later issues of the A. G. A. MONTHLY.

Bubble didn't burst

(Continued from page 22)

To cite one example, a large company made a recent test on storeroom inventories with the result of 90 percent savings in time.

The idea of standard packaging has caught on not only with the utility companies but with jobbers and large hardware dealers as well. Several jobbers have completely remodeled their storerooms to accommodate packaged fittings. We know of two large hardware dealers who will accept nothing but packaged fittings.

There is no question that standard packaging, along with the use of pallets and mechanized equipment, has completely revolutionized storeroom operations. We know every utility company is looking for ways and means to cut costs and increase efficiency in these times of great expansion. We are confident that ordering of standard packages will do both.

If you have not already done so, now is the time to jump on the standard packaging band wagon. Order your fittings in packages of standard count as recommended by the A. G. A. Standard Packaging Committee, and your nipples as set up by the National Bureau of Standards. Thus you can become a member of our happy standard packaging family.

London conferees study natural gas

PHENOMENAL growth of the American natural gas industry was described dramatically to delegates at the Fourth World Power Conference in London, England, July 10-15.

Conferees attending the session on natural gas and gas from liquid fuels were told that in 1949 natural gas supplied 19.4 percent of all energy used in the United States. This figure is almost double the natural gas percentage in 1937 and is a 6.1 percent over-all increase over 1947.

These and other salient facts were supplied in a paper submitted by George H. Smith, assistant managing director, American Gas Association. Writing on "Transportation, Storage, and Peak Load Supply of Natural Gas," Mr. Smith showed how the American gas industry has aggressively tackled expansion problems. The industry is now engaged, he wrote, "in a promotion program designed to install gas wherever heat energy is required."

Underground storage

(Continued from page 14)

value of underground storage is that it provides large storage capacity at a minimum cost. The smallest storage project in gas wells reported[2] to date is 700 million cubic feet and the largest 59 billion cubic feet. To substantiate these statements a comparison of investment costs of various methods of storing Btu's is given in Table I.

A brief review of Table I will show how much less expensive underground storage is than any other method of storage or peak-load production listed therein.

Other major economic advantages of underground storage may be enumerated as follows:

a. A larger proportion of the natural gas purchased can be sold for domestic purposes.

b. Less gas need be sold on an interruptible basis or for dump sale purposes.

c. Peak day loads from 6.0 to 66.3 percent of the total have been taken from storage.

d. Pipeline load factors can be maintained closer to 100 percent and purchase price lowered accordingly.

e. Benefits of storage last for the life of the property with relatively low upkeep cost.

Storage field operations

A few details of storage field operations as conducted by The East Ohio Gas Company may help to clarify some items pertaining to this important subject.

Our five storage areas, about 50 miles south of Cleveland, between the cities of Akron and Canton, now have 211 injection wells with numerous other producing wells around them. Total capacity of these areas at present is about 33 billion cubic feet.

Figure 2 gives typical connections from compressor station to the gas wells and to the storage sands as well as other pertinent data on Chippewa area.

A total of 11,985 hp of compressors capable of pushing 118 million cubic feet of gas per day into storage is available.

Gas may be both stored and removed from storage every month of the year as illustrated in the following Table II showing operations during the year 1949. On warm days in the winter gas is stored and cool days in the summer or pipe line repair may cause the opening of certain wells in the area.

TABLE II—OPERATIONS OF STORAGE AND REMOVAL OF GAS DURING THE MONTHS OF 1949

Month	Input Million Cu. Ft. Approx.	Withdrawal Million Cu. Ft. Approx.
January	172	728
February	136	822
March	402	1,032
April	751	43
May	1,566	7
June	1,399	9
July	1,421	1
August	2,314	2
September	2,211	3
October	2,109	4
November	612	355
December	41	1,512

Measuring and recording of the volume of gas stored in each area is routine work as well as periodic measurement of rock pressure on each well. Wells are cleaned by watering occasionally when it becomes evident that they are not taking the gas or delivering gas as they should. Due to compression to 1,100 psi hydrates may be formed and lines to the wells or the well tubing may become plugged if the water vapor content of the gas is not kept below the dew point. For 1,100 psi and 40° F this requires less than 8.5 lbs. of water vapor per million cubic feet of gas. Injection of methyl alcohol will prevent hydrate formation or will assist in opening a plugged line. The usual practice to free a line of hydrate is to open it and to let it blow.

TABLE I—COMPARISON OF ESTIMATED CAPITAL COSTS FOR VARIOUS TYPES OF STORAGE

Type of Storage	Cost Per Mcf Dollars	Reference Number
Sphere (80 psi)	227.00	28
Steel pipe (315 psi)	207.00	26
Gas holder (low pressure)	156.00	28
Steel pipe (1560 psi)	48.00	28
Natural gas in propane	32.00	14
Liquefaction	13.00	28
LP-Air (1000 Btu)	7.50	28
Catalytic reforming (1000 Btu)	3.75	28
Excavations in rock, salt, coal, etc.	—	No data
Salt cavity storage*	1.42	(Private)
Underground storage (depleted wells)	1.25	16
Underground storage (water sand)	.53	2
Underground storage (depleted wells—13 fields)	.02—.50	2

* Assuming excavation of 1 MMcf cavity and disposal of salt brine in deep brine strata. Much less if salt is recovered and sold.

Migration of gas underground

In selecting an underground storage area geologists and production men rely on the geological and production data available from several years of gas production and drilling experience in the area. They know the extent of the field by the location of dry holes, abandoned wells, and small producing wells in the area. They know the amount of gas produced by each well and the rock pressure decrease over a period of time. They know about the cleanliness of the well, water and oil infiltration from a history of the well.

When the sand porosity limit is not fully defined and open necks of unknown length in a sand lense perimeter may be suspected, flow of storage gas out of the necks can be minimized by locating injection wells a mile or so from them. If there are producing wells in the open neck itself, rock pressure of these wells can be watched and gas drained off through them, or other intermediate wells, thus stopping flow of storage gas past them.

For the past four summers tests have been made in and around our storage areas to determine whether physical flow or migration of storage gas from the injection wells to other producing wells was taking place. The objectives of these tests may be stated as follows:

(1) To assist in defining the boundaries of the storage area.

(2) To determine whether certain wells were connected through the gas sand structure and how much resistance there was to flow of gas between them.

(3) To serve as another guide in planning additional wells for more injection capacity and greater deliverability.

(4) To provide further general information on physical characteristics and gas tightness of the storage field.

Previous studies of this nature by others have been based on measurement of rock pressures before and during storage and withdrawal of measured volumes of gas, or addition of helium[29] to the gas being stored and subsequent analysis

of gas[30] at various wells in the area for helium content. The rock pressure method was also used in these studies and provided much useful information. The helium method should be very satisfactory but involves purchase of a large supply of helium and special helium test instruments. And it would necessitate isolation of the storage area during the period of study.

To accomplish our objectives, a new method of studying underground movement of gases using common analytical equipment and no change in normal routine of storage of gas was devised. Wells to be tested were shut in for the duration of the tests. As they were normally producing wells which were shut in during the summer months anyway, there was no interference in gas production or storage operations. The plan was based on the difference in specific gravity, or heating value, or both of the gas being stored from the gas produced by the wells being tested. Therefore a definite change or variation in specific gravity or Btu of gas samples secured from the test wells over a period of several weeks' time was a direct indication of physical flow of gas from the injection wells.

General procedure

General procedure was to shut in the wells to be tested, secure gas samples and measure rock pressure on each well at intervals of one to two weeks and take samples at the same time from the gas being stored in the area. Before taking a gas sample a pressure gauge was attached to the Christmas tree and the rock pressure recorded. A valve was then opened to purge dormant gas out of the well tubing. After that the gas sample was taken in an approved steel tank following a purging of the tank 8-10 times. Equipment used is shown in Figure 1.

The gas samples were brought to the laboratory in Cleveland for analyses for heating value and specific gravity. A Cutler-Hammer recording calorimeter was used for heating value determinations and an Anubis balance for determinations of specific gravity.

As the tests progressed the results were recorded in graph form for each well and for the gas being stored in each area. Separate graphs were kept for each well. Btu was plotted against time in weeks and specific gravity against time in weeks on the same graph. Variation in rock pressure in psi was plotted in the same way. The graph paper used was partially transparent so that if the curves for the gas being stored were held under those for each well a direct comparison of variation in Btu and specific gravity could be made. After 8-10 weeks of testing it was readily possible to determine whether well samples were being affected by migration of storage gas to them.

To illustrate how the data obtained were used to determine whether migration was taking place or not, three examples are shown in Figure 3. Note in the case of Well No. 1 how the Btu varied similar to that of the gas being stored. Note how the specific gravity of the gas varied and finally reached .630 the same as the gas being stored—also, a gradual rise in rock pressure of some 20 lbs. Direct migration was attributed to this well which was 4,489 feet from the nearest injection well.

An example of a well receiving no migration was Well No. 2 located 6,157 feet from an injection well. The Btu and specific gravity remained practically constant and nowhere near the Btu and specific gravity of the storage gas—and rock pressure did not increase. Although Well No. 3 did not receive storage gas, as shown by the totally dissimilar Btu and specific gravity curves of the well gas as compared to the storage gas, the rock pressure increased steadily by some 85 psi. This is evidence of a pressure connection to the injection well pushing the remaining original Ohio gas in the well out and ultimately there will be direct migration.

After data on the individual wells were completed the conclusions were recorded on a map of each storage area. An example of this is shown in Figure 4. The injection wells are located within area so marked at the left of Figure 4. Note the various conclusions of no migration, slight migration, migration and mixing, direct migration, and no migration but a pressure connection.

Four summers of testing a total of 195 wells, taking some 2,000 gas samples, and analyzing them for heating value and specific gravity have given us confidence in this method of testing for underground migration. It has accomplished the objectives set forth in this article. Some general observations based on this work may be made which are applicable to our storage areas. However, they may not be applicable to other storage areas.

(1) An appreciable increase in rock pressure may not be indicative of direct migration of *(Continued on next page)*

CONVENTION CALENDAR

1950

SEPTEMBER

8 •New Jersey Gas Association, annual meeting, Monmouth Hotel, Spring Lake, N. J.

14-15 •Mid-West Gas Association, gas school and conference, Iowa State College, Ames, Iowa

18-20 •A. G. A. Accident Prevention Conference, Wardman Park Hotel, Washington, D. C.

22 •Oklahoma Utilities Association, annual conference, gas division, Biltmore Hotel, Oklahoma City, Okla.

22-23 •Maryland Utilities Association, Fall Conference, Cavalier Hotel, Virginia Beach, Va.

OCTOBER

2-6 **•A. G. A. Annual Convention, Atlantic City, N. J.; GAMA Exposition of Gas Appliances and Equipment, auditorium, Atlantic City**

23-27 •National Metal Exposition, Amphitheatre, Chicago, Ill. (A. G. A. will exhibit)

NOVEMBER

6-10 •National Hotel Exposition, Grand Central Palace, New York, N. Y. (A. G. A. will exhibit)

8-10 •Wisconsin Utilities Association, gas and electric section convention, Schroeder Hotel, Milwaukee, Wis.

9-10 •Mid-Southeastern Gas Association, annual meeting, Sir Walter Hotel, Raleigh, N. C.

17-18 •New Jersey Utilities Association, annual meeting, Seaview Country Club, Absecon, N. J.

27-28 •Joint A.G.A.-SGA Employee Relations Conference, New Orleans, La.

1951

MARCH

12-14 •Mid-West Gas Association, annual convention, Hotel Fontenelle, Omaha, Neb.

19-21 •GAMA, annual meeting, The Homestead, Hot Springs, Va.

29-30 •New England Gas Association, annual meeting, Hotel Statler, Boston

APRIL

2-4 •A. G. A. Sales Conference on Industrial and Commercial Gas, Industrial and Commercial Gas Section, Shoreham Hotel, Washington, D. C.

9-11 •A. G. A. Mid-West Regional Gas Sales Conference, Residential Gas Section, Edgewater Beach Hotel, Chicago, Ill.

10-12 •Southwestern Gas Measurement Short Course, University of Oklahoma, Norman, Okla.

16-18 •A. G. A. Distribution, Motor Vehicles and Corrosion Conference, Hotel Peabody, Memphis, Tenn.

Personnel service

SERVICES OFFERED

Draftsman—experienced in structural design, drainage, reinforced concrete, architectural, topographic maps, statistical charts and patent drawings. Some college training at George Washington University. Desires to locate near New York. **1652.**

Gas Utilization Engineer—Diversified experience in all phases of utilization including combustion, interchangeability, appliance development, testing, installation and servicing, furnace design and industrial consultation. Familiar with gas utility operations, sales planning and promotion. Willing to relocate and travel. **1653.**

Engineer—25 years' experience in appliance development field with utility and appliance manufacturers. Thorough knowledge of A.G.A. Laboratory procedures. Presently working with gas heaters, ranges, and combinations as well as oil heaters and ranges. Previous experience in gas and electric refrigeration and air conditioning fields. **1654.**

B.S. in Forestry, would like a position in **forestry** and/or **gas detection** work. Experience in detection work. Graduate work in Chemistry. Veteran. (25) **1655**

Operating Executive—First class education. 12 years' all phases manufactured gas. Labor relations and contract negotiations. Five years' research and development during war. At present in charge very large blue gas plant making synthesis gas for chemical processing. Excellent reason for making change. Eastern location. **1656**

Experienced **Research** and **Forecast Economist** with ability to organize or implement economic or statistical program. College graduate, (B.C.S. degree) with 16 years experience. **1657**

Gas Sales and **Promotion**—Diversified experience in all phases of gas sales, fuel estimates, layout and design of equipment, installation and servicing including the training and supervision of men for Industrial, Commercial and House-heating. Many years' experience. Northwest or West preferred. Can arrange for interview at Gas Convention, Atlantic City. **1658**

POSITIONS OPEN

Gas Combustion Engineer—Large Eastern manufacturer desires services of an experienced gas engineer to develop gas burners and heating equipment. College graduate preferred. This position offers a permanent position with excellent opportunities. In reply, please give resumé of experience and salary desired. **0582**

Manager Gas Utility Property in East. Experienced. Give resumé. **0583**

Service Superintendent—Must have actual experience servicing commercial gas appliances as well as ability to direct men. Probable location Chicago, after training. Apply by mail, stating age, experience, starting pay. **0584**

Nationally known organization has vacancy for a personable **appliance engineer** with a comprehensive knowledge of A. G. A. Requirements governing cooking and heating appliances. A minimum of five years' of manufacturer experience is necessary and some A. G. A. Laboratory experience is preferred. Ability to work with a sales department is essential. Location: eastern seaboard with some travel involved. Write stating personal history, previous experience, salary expected and enclose small photo. **0586.**

Sales Vice President wanted for leading oil burner manufacturer entering central gas heating field. Must be able to assume responsibility in developing product line and sales organization. Important for candidate to have successful record in gas heating field. Adequate salary commensurate with responsibilities. Please send record. Replies confidential. **0587**

Experienced Rate Man, by large natural gas interstate pipe line company located in the Middle West. Must be accurate, have a pleasing personality and get-along ability. In reply state education, experience, age and salary required. **0588**

Plant Manager for Furnace Manufacturer. Experience in design, engineering, testing and servicing of gas, coal and oil fired furnaces essential. To be in complete charge of all phases of plant activity. Located in Pennsylvania. Write for appointment stating in detail past experience, education, references and salary expected. **0589**

Young man, engineering background and experienced in **distribution, construction** and **maintenance,** familiar with transmission and measurement wanted by natural gas pipe line and distributing company located in Virginia. Salary commensurate with qualifications. **0590**

Vice-President, Operations, Eastern utility—Wanted a man thoroughly familiar with public utility operations covering electricity, gas, water and telephone, including engineering and construction pertaining to such work. Job requires sufficient experience, knowledge and background to handle all of the operating problems of a diversified utilities company where business management is the prime essential. Must be technically proficient, experienced and qualified; a good administrator, responsible, ambitious, aggressive, willing to have his achievements determine his compensation level. For such a man in the 38-48 age bracket a good job with extraordinary opportunities is available. In reply, please submit resume of experience and salary desired. **0591.**

Underground storage

(Continued from page 47)

storage gas at present but it undoubtedly indicates future migration will take place when the volume of Ohio gas holding back physical flow of storage gas is decreased.

(2) No increase or a very small increase in rock pressure over a period of several months cannot be regarded as absence of migration. Examples of direct migration with no pressure increase have been found.

(3) In at least two instances the possibility of large pockets of Ohio gas between the injection well and the test well have been pointed out.

(4) The greatest distance for gas to migrate underground observed in our tests to date is 8,360 feet. Other instances of travel of more than 7,000 feet have been found, but as a general working basis, a distance of 5,280 feet will stop the physical flow of gas.

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Living

● Reader Bennett Moore, of Boston, mentions in a letter to us, "For the first time in history, the high cost of living has caught up with and passed the cost of high living." —*This Week*

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